November 10, 2005

U.S. Environmental Protection Agency RGP-NOC Processing Municipal Assistance Unit 1 Congress Street, Suite 1100 Boston, Massachusetts 02114-2023 MECHOLOGIC

NOV 1 4 7000

RE: Remediation General Permit - Notice of Intent

ConocoPhillips Company
Former Circle K Store #2703034
449 Route 44
Raynham, Massachusetts

RTN 4-14063 NPDES Permit Exclusion # MA-04I-047B

To Whom It May Concern:

On behalf of ConocoPhillips Company (COP), URS Corporation (URS) is submitting the attached Remediation General Permit (RGP) – Notice of Intent (NOI) for the above referenced location (hereinafter the "Site"). The completed RGP – NOI application form is provided in **Appendix A**. This RGP – NOI pertains to a Category I – Petroleum Related Site Remediation, Sub-Category A Gasoline Only Site. The Site is a former Circle K Facility #2703034, located at 449 Route 44 in Raynham, Massachusetts. ConocoPhillips has retained the environmental responsibility for addressing a historical Circle K environmental investigation. The location of the Site is illustrated on **Figure 1**, **Site Locus**.

National Pollution Discharge Elimination System (NPDES) Permit Exclusion #MA-04I-047 was initially issued for the Site on June 3, 2004 for the discharge of treated groundwater recovered from a dual-phase vacuum extraction (DPVE) remediation system located at the Site to recover and treat gasoline impacted soil and groundwater. The location of the DPVE system, recovery/extraction wells, monitoring wells (the sources of intake water contributing flow to the system) and other pertinent Site features, including onsite buildings, underground utilities and structures, and the discharge location are illustrated in **Figure 2**, **Site Layout.** The discharge of treated groundwater under the NPDES Permit Exclusion commenced on September 23, 2005. A NPDES monthly Discharge Monitoring Report (DMR) was submitted to the EPA on October 25, 2005 for treatment system samples collected during the month of September 2005. Breakthrough of the discharge limits established in NPDES Permit Exclusion did not occur during the reporting period. A copy of the NPDES DMR for the month of September is provided as **Appendix B.** 

The DPVE system consists of a 25 horsepower, positive displacement (PD) blower used as the extraction mechanism. Under high vacuum generated by the PD blower, soil vapor and groundwater are recovered from DPVE extraction wells. Extracted soil vapor is treated through a catalytic oxidizer prior to discharge to the atmosphere. Extracted groundwater is treated through a knock-out tank, an oil/water separator, a shallow-tray air stripper unit and two (2) 125-pound, liquid phase granular activated carbon adsorption (GACA) vessels piped in series prior to discharge to the storm water drainage system via the manhole located near the entrance to the adjoining Friendly's Restaurant. The designed flow rate for the treatment system is approximately 25 gallons per minute (gpm). The discharge of treated groundwater occurs intermittently during operation of the DPVE system. A Process and Instrumentation Diagram (P&ID) illustrating the flow of recovered soil vapor and groundwater through the treatment system components is provided as **Figure 3**, **System Layout**. Treated groundwater is ultimately discharge to the

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Taunton River via Dam Lot Brook, located approximately 800 feet west from the Site. The discharge location at Dam Lot Brook is illustrated on Figure 4, Discharge Pathway and Receiving Waters Map.

A sample of untreated recovered groundwater was collected during routine maintenance and monitoring of the Site remediation system on October 4, 2005 and submitted to a Massachusetts State certified laboratory and analyzed in accordance with Appendix IV: Minimum Levels and Test Methods of the Proposed Remediation General Permit Under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts. The sample was analyzed to address the Massachusetts RGP requirements. The results of the analyses are summarized in the RGP-NOI form provided in Appendix A. A copy of the laboratory analytical report is provided in Appendix C.

Based on the results of the analysis, the following volatile organic compounds (VOCs) or groups of VOCs have been identified in the untreated sample collected from the groundwater treatment system: acetone, benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary-butyl ether (MTBE), tert-butyl alcohol (TBA), tert-amyl methyl ether (TAME), naphthalene, total phenols, and total phthalates. The following metals were also detected in the untreated groundwater sample: arsenic, trivalent chromium (chromium III), copper, lead, nickel, silver, zinc, and iron.

Previously, influent, midpoint, and effluent samples to the liquid-phase GACA vessels were being sampled for volatile petroleum hydrocarbons (VPH) via the Massachusetts Department of Environment Protection (MADEP) approved method under NPDES Permit Exclusion #MA 04I-047B. On August 30, 2003, Mr. Michael O'Brien of the EPA verbally approved the analysis of groundwater treatment system samples for VPH via the MADEP method only. Since diesel is not sold at the Site and historical diesel or fuel oil impacts have not been identified at the Site, analysis for extractable petroleum hydrocarbons (EPH) was deemed not necessary. In addition, metals other than lead are not associated with the use of the Site as a retail gasoline sales facility and therefore, were not sampled for as part of previous assessment activities.

Six of the eight metals detected, including arsenic, copper, lead, nickel, zinc, and iron were reported at concentrations exceeding the applicable Effluent Limitations published in Appendix III of the *Proposed Remediation General Permit Under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts*. Therefore, in accordance with Section 2 of Appendix V, a dilution factor for the detected metals was calculated as follows:

$$DF = (Qd + Qs)/Qd$$

Where:

DF = Dilution Factor

Qd = Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)

Os = Receiving water 7Q10 flow (cfs) where,

7Q10 = The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

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As such, using a maximum design flow rate of approximately 50 gpm or 0.1115 cfs and a 7Q10 value of 24.6 cfs obtained from the MADEP at the Titicut Street gauging station; a dilution factor of 222 is calculated for the system discharge to the Taunton River. Given this dilution factor, the metal concentrations detected in the untreated groundwater sample collected on October 4, 2005 are compared to the published discharge limits for the dilution factor range of >100 as published in Appendix IV of the Proposed Remediation General Permit Under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts in Table 1. Based on the comparison, all concentrations of metals which were detected were below the applicable discharge limit associated with the dilution factor range, with the exception of iron. Iron was detected at a concentration of 61,900 micrograms per liter (μg/l), exceeding the maximum, ceiling discharge limit for iron of 5,000 μg/l. However, iron is considered a nutrient and is not regulated in soil, groundwater, or surface water under the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000. In addition, the presence of iron in groundwater is not related to the release of gasoline or the historical use of the Site as a retail gasoline sales facility. Therefore, measures to reduce the concentration of iron in discharged treated groundwater will not be implemented at this time. If the EPA deems the reduction of iron in the effluent stream necessary, alternatives will be evaluated and implemented in a timely manner.

If you have any questions or comments regarding this RGP-NOI, please do not hesitate to contact the undersigned at (603) 893-0616.

Sincerely,

URS CORPORATION

Yared K. Urban

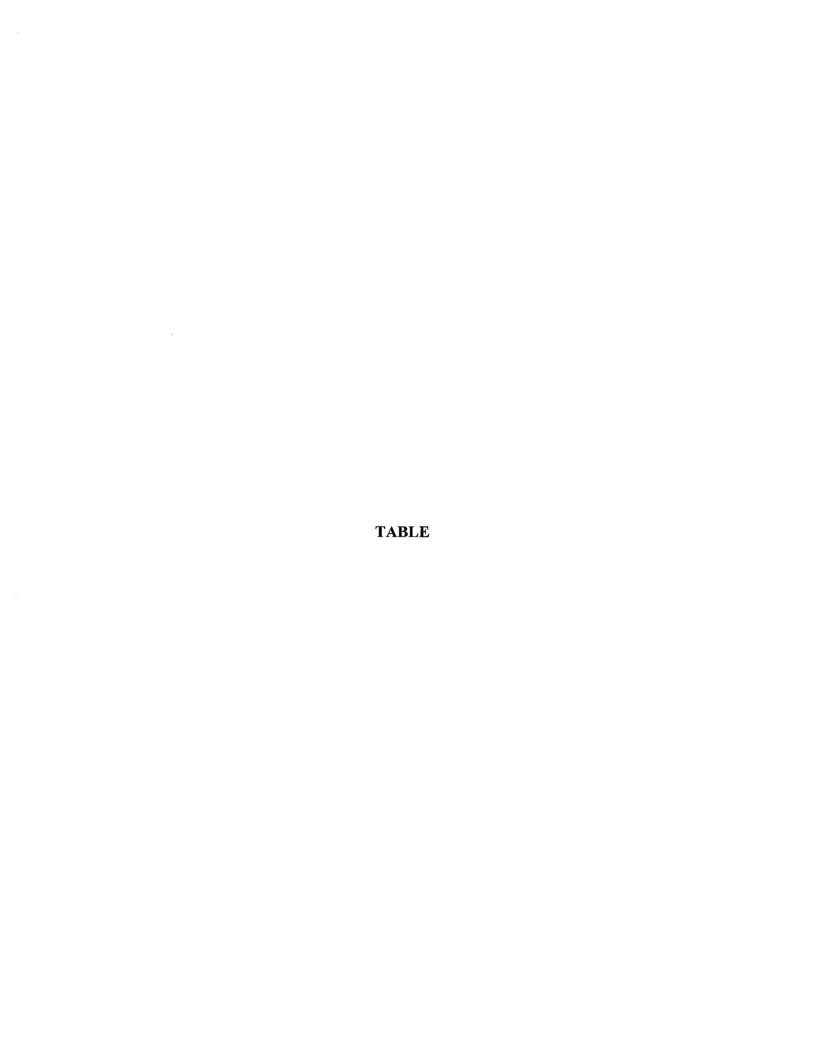
Senior Environmental Scientist

Attachments

cc:

Ms. Karen Pollack, ConocoPhillips Company, 1400 Park Avenue, Linden, New Jersey 07036

Remediation General Permit - Notice of Intent.doc



#### Table 1

# Remediation General Permit - Notice of Intent Application Metals Analytical Results Compared to Discharge Concentration Limits For A Dilution Factor Greater Than 100 Former Circle K Store # 2703034

449 Route 44, Raynham, MA

Dilution Range >100	Date	Mercury (ug/l)	Iron (ug/l)	Arsenic (ug/l)	Selenium (ug/l)	Antimony (ug/l)	Cadmium (ug/)	Chromium III (ug/l)	Chromium IV (ug/l)	Copper (ug/l)	Lead (ug/l)	Nickel (ug/l)	Silver (ug/l)
Discharge Limit		2.3	5,000	540	408	141	260	1,710	1,710	2,070	430	2,380	240
Influent	10/04/05	<0.062	61,900	24	<9.4	<6.4	<0.97	43	<5	80	48	37	8

#### Notes:

Concentration reported in micrograms per liter (µg/l)

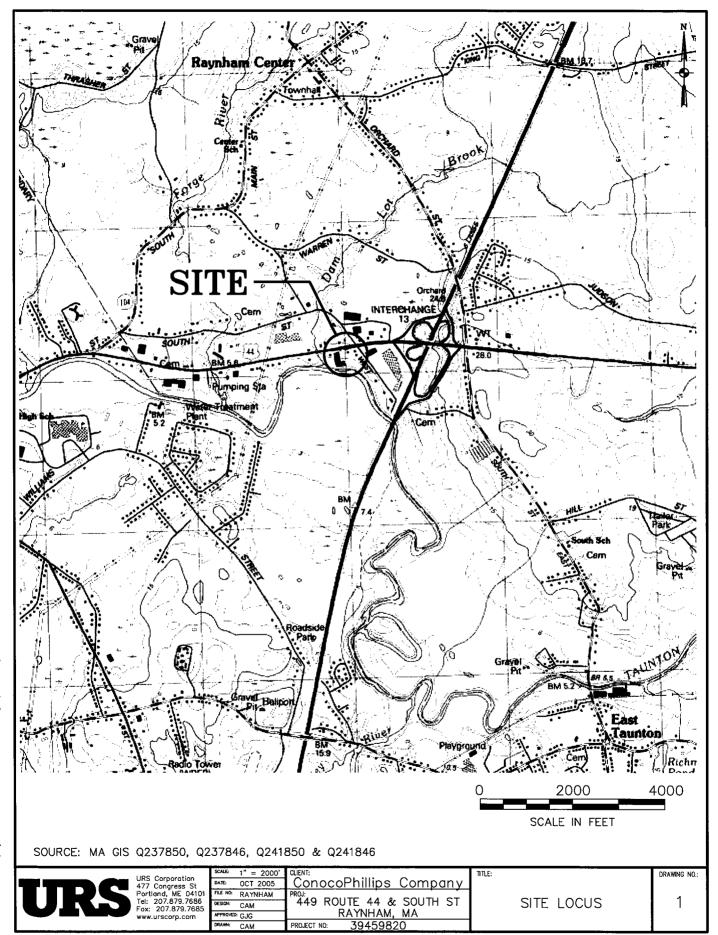
NA = Not Analyzed

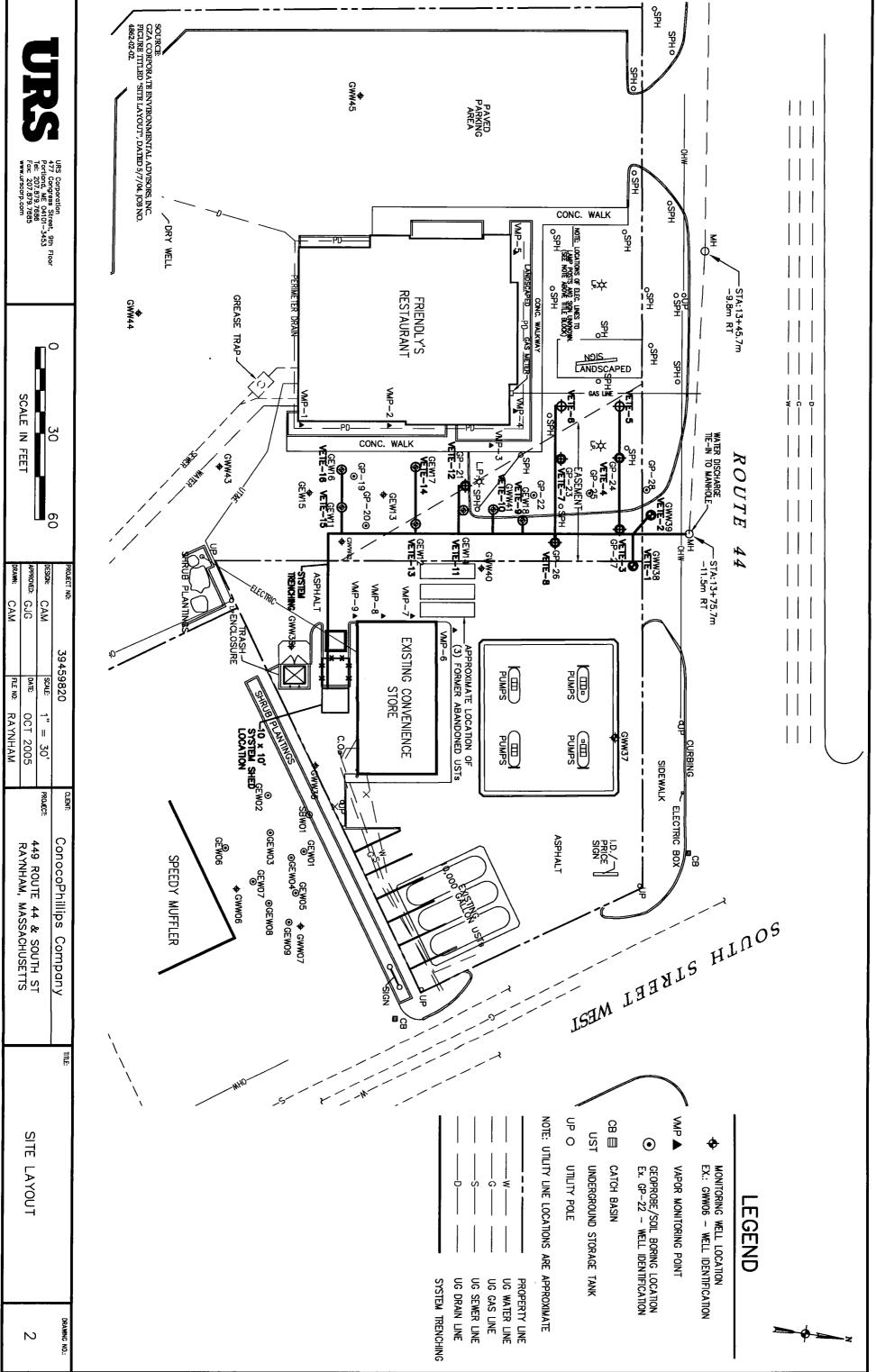
ND = Not Detected

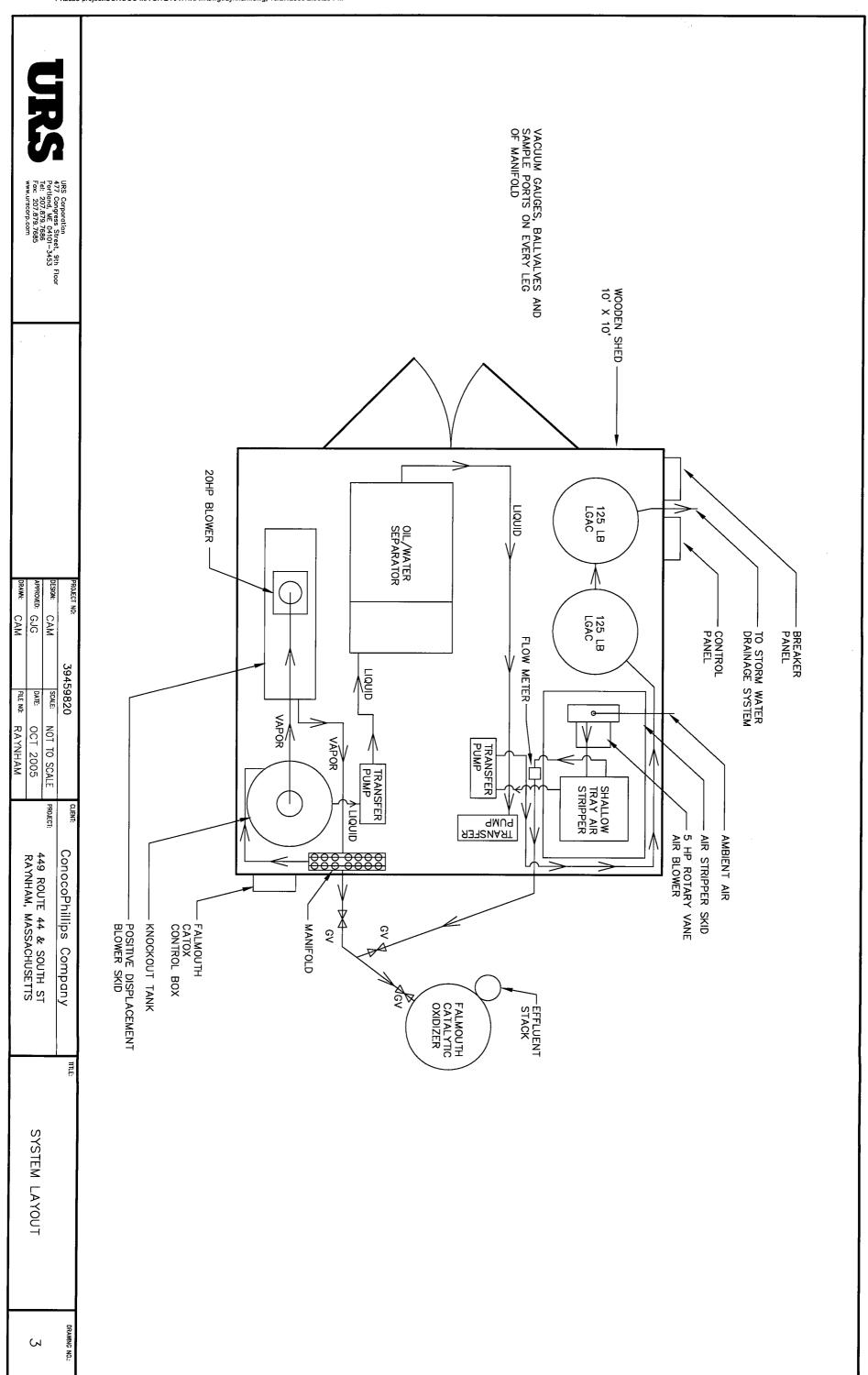
< = Measurement less than method detection limit.

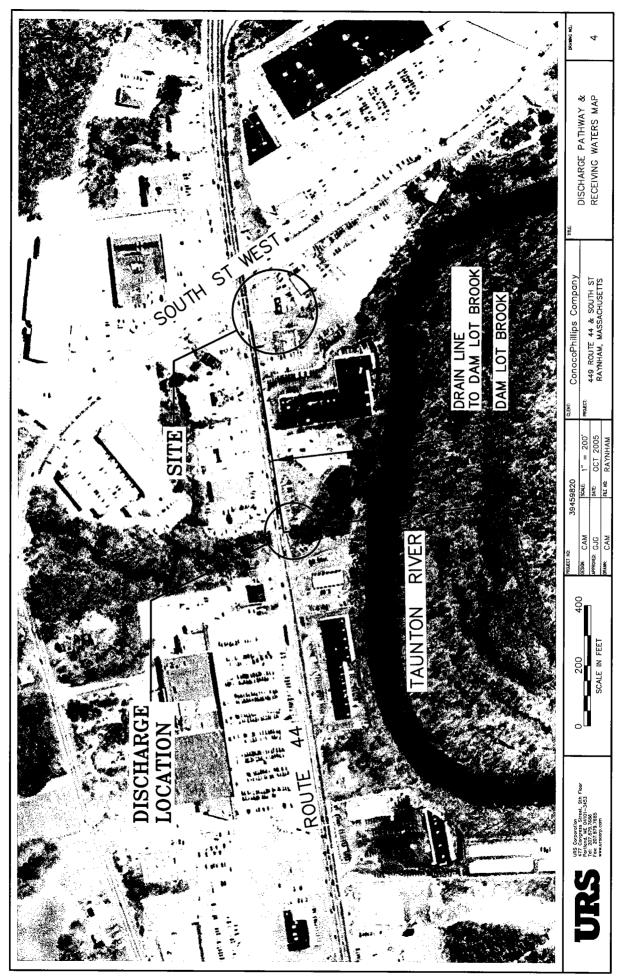
### **FIGURES**

NOV 1 4









### APPENDIX A

**RGP-NOI Application Form** 

### B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General site information. Please provide the following information about the site:

a) Name of facility/site: Former Circle K Facility #	<sup>‡</sup> 2703034	Facility/site address: 449	Facility/site address: 449 Route 44 and South Street					
Location of <b>facility/site</b> : Facilingitude: 74 02' 56" latitude: 41 51' 22"	cility SIC code(s):	Street: 449 Route 44 and South Street						
b) Name of facility/site owner: Dawn Coughlin (Ame	erada Hess)	Town: Raynham						
Email address of owner: dcoughlin@hess.com		State: MA	Zip: 02301	County:				
Telephone no.of facility/site owner: (732) 750-7068		]						
Fax no. of facility/site owner: (732) 750-6105		Owner is (check one): 1. Fe	deral 2. State/Trib	pal				
Address of owner (if different from site):		3. Private X 4. other, if so, describe:						
Street: One Hess Plaza								
Town: Woodbridge	State: NJ	Zip: 07095	County:					
c) Legal name of operator:	Operator telep	elephone no: (908) 523-6072						
ConocoPhillips Company	Operator fax r	oax no.: (908) 523-6989 Operator email: louis.s.mosconi@conocophillip						
Operator contact name and title: Louis S. Mosconi,CPC	G, Area Manager			<del>}</del>				
Address of operator (if different from owner):	Street: 1400	Park Avenue						
Town: Linden	State: NJ	Zip: 07036	County:					
d) Check "yes" or "no" for the following:  1. Has a prior NPDES permit exclusion been granted for  2. Has a prior NPDES application (Form 1 & 2C) ever be  3. Is the discharge a "new discharge" as defined by 40 CF  4. For sites in Massachusetts, is the discharge covered un	een filed for the discharge? Va	ee No V if "yes" data a	and tradicina #.	o o				

generation of dis If "yes," please l 1. site identificat 2. permit or licer 3. state agency c	scharge? Yes X ist: ion # assigned by asse # assigned: ontact information	the permitting or other action which is causing the No RTN 4-14063  the state of NH or MA:  name, location, and telephone number: ce, 20 Riverside Drive	f) Is the site/facility covered by any other EPA permit, including:  1. multi-sector storm water general permit? Y NX, if Y, number:  2. phase I or II construction storm water general permit? Y NX, if Y, number:  3. individual NPDES permit? YX N_, if Y, number: MA-04I-047B  4. any other water quality related permit? Y NX, if Y, number:						
•	(508) 946-2700								
2. Discharge in	nformation. Pleas	se provide information about the discharge, (attachi	ng additional sheets as needed) including:						
seperator to rem	love any non-aque	for which the owner/applicant is seeking coverage: ual-phase vapor extraction system is treated thro eous phase liquid (NAPL) if present, through an two 200-lb liquid phase granular activated carbo	ugh a knock-out tank to remove suspended solids, through an oil/water airstripper to remove or decrease volatile organic compounds (GAC) vessels prior to discharge.						
b) Provide the following information about each discharge:	Number of discharge points:	Average now_23 gpin is maximum flow a de	of discharge (in cubic feet per second, ft3/s)? Max. flow_50 gpm_sign value? Y X N_e notation if this value is a design value or estimate if not available.						
3) Latitude and lept.4:long.	ongitude of each d lat; pt.5:	ischarge within 100 feet: pt.1:long. 54' 20' lat. 71 3' long. lat. lat.	4"; pt.2: long. lat. ; pt.3: long. lat. ; _; pt.7: long. lat. ; pt.8:long. lat. ; etc.						
4) If hydrostatic	testing, total volun	ne of the discharge (gals): NA 5) Is the discharge Is discharge ongo							
c) Expected dates	s of discharge (mm	/dd/yy): start_9/23/2005end9/23/2010							
d) Please attach a	d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).								

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for all of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only X	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is believed present or believed absent in the potential discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample	Analytical Method	Minimum Level (ML) of	Maximum daily	value	Avg. daily value	
			(1 min- imum)	(e.g., grab)	Used (method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids		Х	1	grab		15 mg/l	984,000			
2. Total Residual Chlorine	X		1	grab	330.4	0.04 mg/l	ND			
3. Total Petroleum Hydrocarbons	Х		1	grab	1664A	1.7 mg/l	21,000			
4. Cyanide	x		1	grab	335.4	0.005 mg/l	ND			
5. Benzene		Х	1	grab	8260	0.05 ug/l	110			
6. Toluene		Х	1	grab	8260	0.7 ug/l	280			
7. Ethylbenzene		Х	1	grab	8260	0.8 ug/l	18			
8. (m,p,o) Xylenes		Х	1	grab	8260	8 ug/l	750			
9. Total BTEX4		Х	1	grab	8260	8 ug/l	1158			

<sup>&</sup>lt;sup>4</sup>BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method	Minimum Level (ML) of	Maximum daily	value	Avg. daily value	2
			(1 min- imum)	grab)	Used (method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide <sup>5</sup> (1,2- Dibromo-methane)	x		1	grab	8260	1 ug/l	ND			
11. Methyl-tert-Butyl Ether (MtBE)		x	1	grab	8260	0.5 ug/l	6		· · · · · · · · · · · · · · · · · · ·	
12. tert-Butyl Alcohol (TBA)		x	1	grab	8260	10 ug/l	130			
13. tert-Amyl Methyl Ether (TAME)		х	1	grab	8260	0.8 ug/l	1			
14. Naphthalene		Х	1	grab	8260	- 1 ug/l	98			
15. Carbon Tetra- chloride	. ×		1	grab	8260	1 ug/l	ND			
16. 1,4 Dichlorobenzene	Х		1	grab	8260	1 ug/l	ND			
17. 1,2 Dichlorobenzene	Х		1	grab	8260	1 ug/l	ND			<u>.                                    </u>
18. 1,3 Dichlorobenzene	Х		1	grab	8260	1 ug/l	ND			
19. 1,1 Dichloroethane	Х		1	grab	8260	1 ug/l	ND			
20. 1,2 Dichloroethane	Х		1	grab	8260	1 ug/l	ND			
21. 1,1 Dichloroethylene	X		1	grab	8260	0.8 ug/l	ND			
22. cis-1,2 Dichloro- ethylene	×		1	grab	8260	0.8 ug/l	ND			
23. Dichloromethane (Methylene Chloride)	х		1	grab	8260	2.0 ug/l	ND			<u> </u>
24. Tetrachloroethylene	Х		1	grab	8260	0.8 ug/l	ND		<del></del>	<u></u>

<sup>&</sup>lt;sup>5</sup>EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method Used	Minimum Level (ML) of Test	Maximum daily	value	Avg. daily Valu	e
THE TANK THE			(1 min- imum)	grab)	(method #)	Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	Х		1	grab	8260	0.8 ug/l	ND			
26. 1,1,2 Trichloroethane	X		1	grab	8260	0.8 ug/l	ND			
27. Trichloroethylene	х		1	grab	8260	1 ug/l	ND			
28. Vinyl Chloride	Х		1	grab	8260	1 ug/l	ND			
29. Acetone			1	grab	8260	6 ug/l	57 <sup>7</sup>			
30. 1,4 Dioxane	X		1	grab	8260	70 ug/l	ND			
31. Total Phenols		Х	1	grab	8270C		197			
32. Pentachlorophenol	X		1	grab	8270C	3 ug/l	ND ND			
33. Total Phthalates <sup>6</sup> (Phthalate esthers)		x	1	grab	8270C	2 ug/l	10			
34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	х		1	grab	8270C	2 ug/l	ND			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)										
a. Benzo(a) Anthracene	Х		1	grab	8270C	1 ug/l	ND	-		
b. Benzo(a) Pyrene	Х		1	grab	8270C	1 ug/l	ND			
c. Benzo(b)Fluoranthene	Х		1	grab	8270C	1 ug/l	ND			<u> </u>
d. Benzo(k) Fluoranthene	Х		1	grab	8270C	1 ug/l	ND			<del>                                     </del>
e. Chrysene	Х		1	grab	8270C	1 ug/l	ND			

The sum of individual phthalate compounds.
7 Acetone is a typical laboratory contaminant, based on EPA Data Validation Guidelines for VOCs the concentration reported for Acetone in the sample can be qualified as not detected at the reported concentration.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method Used	Minimum Level (ML) of	Maximum daily	value	Average daily v	alue
			(1 min- imum)	grab)	(method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	Х		1	grab	8270C	1 ug/l	ND			
g. Indeno(1,2,3-cd) Pyrene	X		1	grab	8270C	1 ug/i	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)										
h. Acenaphthene	Х		1	grab	8270C	1 ug/l	ND			
i. Acenaphthylene	Х		1	grab	8270C	1 ug/l	ND			
j. Anthracene	X		1	grab	8270C	1 ug/l	ND			
k. Benzo(ghi) Perylene	X		1	grab	8270C	1 ug/l	ND			
l. Fluoranthene	Х		1	grab	8270C	1 ug/l	ND			
m. Fluorene	Х		1	grab	8270C	1 ug/l	ND			
n. Naphthalene-		Х	1	grab	8270C	1 ug/l	26			
o. Phenanthrene	Х		1	grab	8270C	1 ug/l	ND			
p. Pyrene	Х		1	grab	8270C	1 ug/l	ND			
37. Total Polychlorinated Biphenyls (PCBs)	x		1	grab	608	0.16 ug/l	ND			
38. Antimony	Х		1	grab	200.7	0.0064 mg/l	ND			
39. Arsenic		Х	11	grab	200.7	0.0093 mg/l	24.1			
40. Cadmium	х		1	grab	200.7	0.00097 mg/	ND			
41. Chromium III	<u> </u>	Х	1	grab	200.7	0.0048 mg/l	42.6			
42. Chromium VI	Х		11	grab	7199	5.0 ug/l	ND			

4. Treatment system informa	tion. Please des	cribe the treatmer	nt syste	em using separa	ate sheets as necessar	y, including:		·-···		
a) A description of the treatm	ent system, inclu	ding a schematic	of the	proposed or ex	cisting treatment syste	em:				
b) Identify each applicable	Frac. tank	Air stripper	X	Oil/water sep	Oil/water separator X		Bag filter	GAC filter X		
treatment unit (check all that apply):  Chlorination Dechlorination Other (please describe):										
c) Proposed average and maximum flow rates (gallons per minute) for the discharge and the design flow rate(s) (gallons per minute) of the treatment system:  Average flow rate of discharge 25 Maximum flow rate of treatment system 50 Design flow rate of treatment system 25										
d) A description of chemical	additives being u	sed or planned to	be us	ed (attach MSI	S sheets): NA					
5. Receiving surface water(s).	Please provide	information abou	t the r	eceiving water(	(s), using separate she	ets as necessary:				
a) Identify the discharge path	way: 1	Direct	With	in facility	Storm drain_X_	River/brook	Wetlands	Other (describe):		
b) Provide a narrative descrip Treated groundwater is dis at Dam Lot Brook Discha	tion of the discharged to the s rge Plan attache	arge pathway, inc storm water drain ed	luding nage s	the name(s) of system within i	the receiving waters Route 44 via undergi	ound piping, travels	west to discharge loc	cation located		
For multiple discharges, nu     For indirect dischargers, in     The map should also include	c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: $\chi$ 1. For multiple discharges, number the discharges sequentially.  2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water  The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.									
d) Provide the state water qua	lity classification	of the receiving	water	Class B						
e) Provide the reported or calc Please attach any calculation						4.6	ofs			
f) Is the receiving water a list. Is there a TMDL? Yes		quality impaired or or which pollutan		ted water? Yes	No_X_If yes	, for which pollutant(s	)?			

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.
a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? YesNo_X_  Has any consultation with the federal services been completed? No_X_ or is consultation underway? No_X_  What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one):  a "no jeopardy" opinion?or written concurrence on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?  Yes NoX Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes NoX
7. Supplemental information. :
Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.
8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:  I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Facility/Site Name: Former Circle K Facility #2703034
Operator signature: Louis Inon.  Title: AREA MANAGER  Date: 11/7/05 -
Title: AREA MANAGEN
Date: 11/7/0s -

## APPENDIX B

September 2005 Discharge Monitoring Report

Via United States Postal Service

October 25, 2005

NPDES Permit Unit
Mail Code (CPU)
Office of Ecosystem Protection
Environmental Protection Agency
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

RE: Initial System Start-up Discharge Monitoring Report ConocoPhillips Company Former Circle K Facility #2703034 449 Route 44 Raynham, Massachusetts DEP Site No. 4-14063 NPDES Reference # MA 04I-047B

To Whom It May Concern:

On behalf of ConocoPhillips Company (COP), URS Corporation (URS) submits this groundwater remediation system Discharge Monitoring Report (DMR) for the Former Circle K Facility #2703034, located at 449 Route 44, Raynham, Massachusetts (hereinafter the "Site"). This report summarizes the discharge of treated groundwater during initial start-up of the groundwater treatment system at the Site in accordance with National Pollution Discharge Elimination System (NPDES) Permit Exclusion #MA 04I-047B. A copy of the NPDES Permit Exclusion is provided as **Appendix A**.

#### Introduction

The U.S. Environmental Protection Agency (EPA) issued NPDES Permit Exclusion #MA 04I-047 to COP and the former environmental consultants of record Corporate Environmental Advisors, Inc. (CEA) on June 3, 2004, authorizing the discharge of treated groundwater to the storm drainage system located within Route 44 which ultimately discharges to the Taunton River.

Mr. Roger Janson, the Associate Director of the Surface Waters Program, issued a revised NPDES Exclusion #MA 02I-015, on June 3, 2004 identifying COP and CEA as responsible parties discharging under the NPDES Permit Exclusion. On April 1, 2005, URS was retained as the environmental consultant of record for COP. On June 27, 2005, a request for change in the reporter information was submitted to the NPDES Permits Unit of the EPA identifying URS as the new environmental consultant for COP. On July 7, 2005, revised NPDES Permit Exclusion #MA-04I-047B was issued by EPA to URS and COP.

On August 30, 2005, Mr. Michael O'Brien of the EPA verbally approved the analysis of groundwater treatment system samples for volatile petroleum hydrocarbons (VPH) via the Massachusetts Department of Environmental Protection (MADEP) approved method only. Since diesel is not sold at the Site and historical diesel or fuel oil impacts have not been identified at the Site, analysis for

URS Corporation 477 Congress Street, 9th Floor Portland, ME 04101 Tel: 207.879.7686 Fax: 207.879.7685



NPDES Permit Unit, EPA October 25, 2005 Page 2 of 4

extractable petroleum hydrocarbons (EPH) was deemed not necessary. Therefore, VPH analysis represents the total petroleum hydrocarbon (TPH) concentration when the concentrations of the VPH constituents are added.

This DMR pertains to the discharge of groundwater from a dual-phase vacuum extraction (DPVE) remediation system. The groundwater discharged from this DPVE system is treated via an oil/water separator, a shallow tray air stripper unit and two (2) granular activated carbon absorption (GACA) vessels in series. Sample ports are located prior to the primary GACA vessel (Influent), at the midpoint between the primary and secondary GACA vessels (Midpoint #1), and one sample port prior to discharge (Effluent). A fourth sample port will be installed prior to the air stripper to monitor the removal efficiency of the air stripper unit. Samples from this sample port will also be analyzed for VPH via the MADEP approved method.

#### Maintenance and Monitoring Activities

On October 13, 2005, the groundwater treatment system was shut down due to the detection of volatile organic compounds (VOCs) in the effluent sample collected on October 4, 2005. The concentrations detected in the effluent sample were reported at concentrations significantly below the permissible discharge limits established in NPDES Permit Exclusion #MA 04I-047B. However, the system was shut down as a conservative measure and the liquid phase carbon was replaced with virgin, liquid-phase, granular activated carbon (GAC) on October 18 and 21, 2005. The system will be restarted the week of October 24, 2005. Also, as part of system maintenance activities, silt which had accumulated in the knock-out tank, oil/water separator, and air stripper was vacuumed out. Spent carbon and silt were placed in 55-gallon drums, and staged in a secure location onsite while awaiting transport and disposal to an approved disposal facility under the appropriate transportation documentation, pending analytical results for disposal parameters. The generated remediation waste will be disposed of within 120 days in accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0034(3). During the period from September 23 to October 4, 2005, approximately 7,873 gallons of groundwater was recovered, treated, and discharged under the NDPES Permit Exclusion.

Effluent samples collected from the groundwater treatment system were observed to be free of suspended solids and turbidity, which may cause esthetically objectionable conditions and/or which may impair the use of the receiving surface water body.

#### **Groundwater Treatment System Sampling Results**

Groundwater samples were collected from the groundwater treatment system on September 23, September 25, September 27, and October 4, 2005. All groundwater treatment system samples were preserved in the field, placed on ice, and transported to the Severn-Trent Laboratories (STL), a Massachusetts certified state laboratory in Westfield, Massachusetts under Chain of Custody protocol.

On September 23, 25, and 27, 2005, "Influent", "Midpoint", and "Effluent" groundwater treatment system samples were collected and analyzed for VPH via the MADEP approved method. Treatment

NPDES Permit Unit, EPA October 25, 2005 Page 3 of 4

system analytical results are summarized in **Table 1**. Concentrations of VPH target analytes benzene, toluene, ethylbenzene and total xylenes (BTEX), methyl tertiary-butyl either (MTBE), naphthalene, and total VPH were not detected above the applicable NPDES Permit Exclusion discharge limits in effluent samples collected in September 2005. All VPH carbon fractions and target analyses were reported below laboratory reporting limits with the exception of C<sub>5</sub>-C<sub>8</sub> aliphatics, which was detected at a concentration of 62 micrograms per liter (µg/l) in the effluent sample collected on September 23, 2005 (Day 1). The total effluent BTEX concentration was significantly below the permissible discharge limit of 100 µg/l. This concentration of C<sub>5</sub>-C<sub>8</sub> aliphatics is likely an artifact of residual petroleum concentrations present in either the GAC vessels or one of the system components as evidenced by the results of subsequent sampling events on September 25 and September 27, 2005. Severn-Trent Laboratories analytical results are provided in **Appendix B**.

On October 4, 2005, VPH carbon fractions  $C_5$ - $C_8$  aliphatics and  $C_9$ - $C_{10}$  aromatics were detected at concentrations of 74 µg/l and 340 µg/l, respectively in the "Effluent" sample for the groundwater treatment system. Remaining VPH carbon fraction  $C_9$ - $C_{12}$  aliphatics and target analytes BTEX, MTBE, and naphthalene were all reported below laboratory reporting limits (RLs). A concentration of one-half the RL was used in the calculation of the total VPH concentration for those compounds reported as not detected. As such, a total VPH concentration of 457 µg/l is reported for the effluent sample, which is significantly below the permit discharge limit of 5,000 µg/l. Although breakthrough of the liquid phase GAC did not occur, as previously discussed, spent carbon and accumulated silt has been removed and treatment system is scheduled to be restarted the week of October 24, 2005.

#### **Conclusions**

The DPVE system is operating as designed and the groundwater treatment portion of the system is operating correctly. The system is shutdown for routine GAC replacement and cleaning of system components to maintain optimum and cost effective system performance and to maintain compliance with all applicable federal, state, and local requirements. Volatile petroleum hydrocarbon compounds were not identified in effluent samples above NPDES discharge limits during the reporting period. Once the DPVE system is restarted, sampling of the groundwater treatment will resume on a monthly basis. To prevent the discharge of VPH above the applicable NPDES discharge limits, the system will be inspected weekly during routine system inspection, maintenance, and monitoring visits. Silt collecting in the system will be removed from the system components as necessary. Alternative methods to reduce silt build-up in system components are also being evaluated.

A Notice of Intent is currently being prepared in accordance with the *Proposed Remediation General Permit Under the National Pollutant Discharge Elimination System for Discharges in Massachusetts (September 2005)*, to request that discharges occurring under current NPDES Permit Exclusion #MA 04I-047B be covered under a Remediation General Permit (RGP). The Notice of Intent will be submitted by October 28, 2005.

NPDES Permit Unit, EPA October 25, 2005 Page 4 of 4

Should you have any questions, or require additional information, please do not hesitate to contact our office at (603) 893-0616.

Sincerely,

**URS CORPORATION** 

Senior Environmental Scientist

Enclosures

cc:

Ms. Karen Pollack, ConocoPhillips Co., Bayway Office Building, 1400 Park Ave., Linden, NJ 07036

Ms. Dawn Coughlin, Amerada Hess Corporation, 1 Hess Plaza, Woodbridge, NJ 07095 MADEP, Southeastern Regional Office, 20 Riverside Drive, Lakeville, MA 02347

NPDES DMR - September 2005 - FINAL.doc

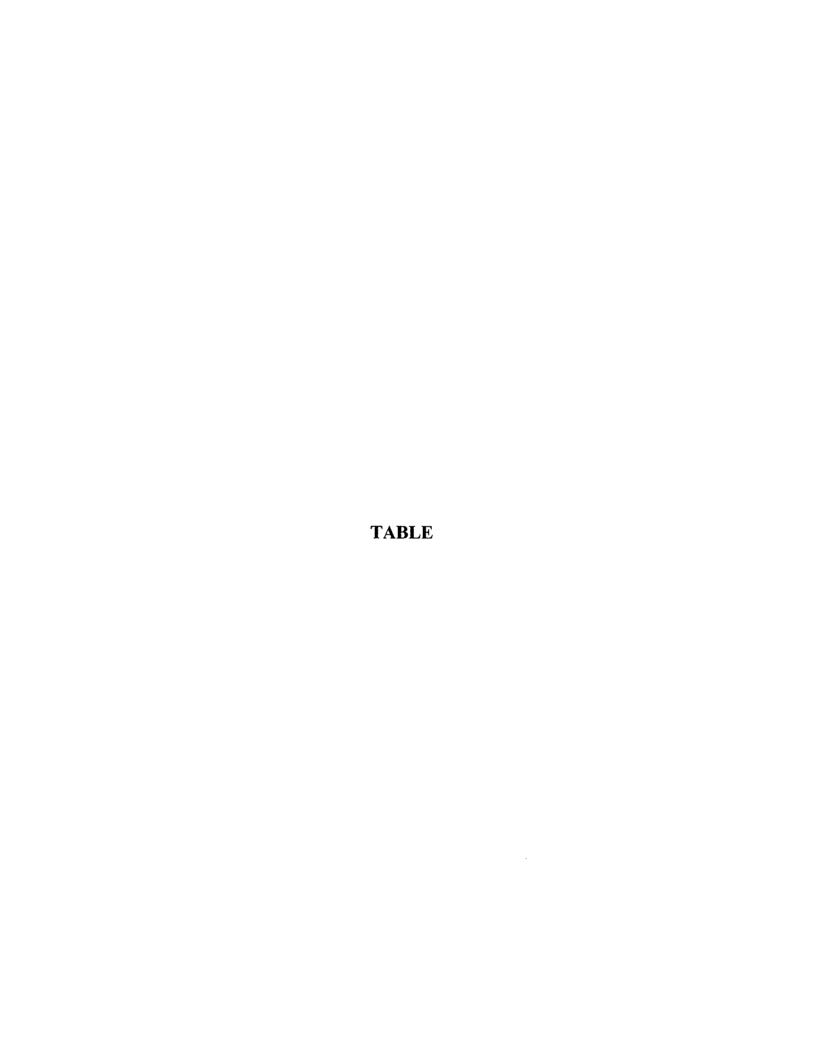


Table 1
Summary of NPDES Groundwater Treatment System Analytical Data
Former Circle K Store # 2703034
449 Route 44, Raynham, MA

Sampling Location	Date	C <sub>5</sub> -C <sub>8</sub> Aliphatics (µg/I)	C <sub>9</sub> -C <sub>12</sub> Aliphatics (µg/l)	C <sub>9</sub> -C <sub>10</sub> Aromatics (µg/l)	Benzene (µg/I)	Toluene (µg/L)	Ethylbenzene (µg/l)	Xylenes (µg/l)	Total BTEX (µg/l)	MTBE (µg/l)	Naphthalene (µg/l)	Total VPH (μg/l)
NPDES					5.0	NA	NA	NA	100	70	20	5,000
Influent	09/23/05	1,200	<250	5,400	600	1,000	130	<25	1,730	<25	330	8,660
	09/25/05	190	<50	660	7	16	<5	41	64	<5	50	964
	09/27/05	190	<50	98	<5	<5	<5	6	6	<5	<10	294
	10/04/05	250	<50	1,800	12	33	6	189	240	<5	110	2,400
Midpoint 1	09/23/05	<50	<50	<50	<5	<b>&lt;</b> 5	<5	<5	ND	<5	<10	ND
	09/25/05	100	<50	230	<5	<5	<5	<5	ND	<5	<10	330
	09/27/05	99	<50	<50	<5	<5	<5	<5	ND	<5	<10	99
	10/04/05	89	<50	280	<5	<5	<5	<5	ND	<5	<10	369
Effluent	09/23/05	62	<50	<50	<5	<5	<b>&lt;</b> 5	<5	ND	<5	<10	62
	09/25/05	<50	<50	<50	<5	<5	<5	<5	ND	<5	<10	0
	09/27/05	<50	<50	<50	<5	<5	<5	<5	ND	<5	<10	0
	10/04/05	74	<50	340	<5	<5	<5	<5	ND	<5	<10	457

#### Notes

Concentration reported in micrograms per liter  $(\mu g/l)$ 

NA = Not Analyzed

ND = Not Detected

< = Measurement less than method detection limit.

# APPENDIX A NPDES Permit Exclusion



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1 1 CONGRESS STREET, SUITE 1100 BOSTON, MASSACHUSETTS 02114-2023

**DATE:** July 7, 2005\*

Mr. Louis S. Mosconi, CPG ConocoPhillips Company Bayway Office Building 1400 Park Avenue Linden, New Jersey 07036 AND

Mr. Jared K. Urban
Senior Environmental Scientist
URS Corporation
5 Industrial Way
Salem, New Hampshire 03079-2830

Re: Former Circle K Store #2703034 449 Route 44; Raynham, Massachusetts NPDES Exclusion #MA-04I-047B (This letter supercedes letter #MA-04I-047 issued June 3, 2004.)

Dear Mr. Mosconi, and Mr. Urban:

As of June 3, 2002, the On-Scene Coordinators (OSC's) in the Emergency Planning & Response Branch of EPA-New England (EPA-NE) have no longer been issuing National Pollutant Discharge Elimination (NPDES) Permit "Exclusion" letters in the states of Massachusetts and New Hampshire. EPA is, however, still the permitting authority for point source water discharge permits in these two states. Since the early 90's, EPA-NE granted exclusions to the NPDES permit process under the authority of Section 122.3(d) of the NPDES regulations to allow expedited testing and cleanup of contaminated sites for which a discharge of groundwater and incidental surface water was required following appropriate treatment. This process was necessary due to the large number of cleanups requiring permits and the time-frame necessary to issue individual NPDES permits.

Exclusion letters were developed for each site following submission and review of an application with various site information, test data, treatment type, and other facts. Discharge effluent limits, monitoring requirements and other special conditions were set out in the letters signed by the OSC in charge.

We are in the process of developing a new General NPDES Permit to cover short and long term discharges from remediation activities. We expect the lead time needed to become covered by the General Permit to be about the same as the current exclusion waiver process. We hope to have the General Permit published in the Federal Register as final and effective in the near future. Until the effective date of the new General Permit, EPA-NE is requesting that you provide treatment of any such discharges to waters of the United States consistent with the limits and other requirements traditionally established in the Exclusion letters process.

Please refer to "Attachment A" to this letter for the interim requirements for discharge.

<sup>\*</sup> Reissued with new consultant.

If you have any questions or concerns about this process please contact Michael J. O'Brien of the NPDES Program at (617) 918-1649. Additional contacts for the NPDES Program include Olga Vergara for MA issues at (617) 918-1519 and Shelley Puleo for NH issues at (617) 918-1545. Thank you for your cooperation as we develop this new permit.

Sincerely yours,

Roger anson, Associate Director
MUNICIPAL PERMITS BRANCH

cc. State of MA/or State of NH

# \*\*\*\*Former Circle K Store #2703034\*\*\*\*. 449 Route 44 Raynham, Massachusetts

#### ATTACHMENT A

The discharge(s) referenced in the accompanying letter must be in accordance with the following provisions:

- No discharge of oil, sufficient to cause a sheen (as defined in 40 CFR 110), occurs to the drainage system. The discharge of a sheen of oil or gasoline constitutes an oil spill and must be reported immediately to the National Response Center (NRC) at (800) 424-8802.
- 2. Security provisions are maintained to assure that system failure, vandalism, or other incidents will be addressed in a timely fashion, preventing the loss of oil or contaminated water to the drainage system.
- 3. The flow rate shall be maintained within acceptable operating parameters and shall not exceed the design flow of the treatment system. There shall be no bypass of the treatment system unless unavoidable to prevent loss of life, personal injury, or severe property damage. No filter backwash or other maintenance waters shall be discharged without treatment.
- 4. Sampling and analysis, in accordance with EPA Methods, must be performed for the following chemicals with the listed limits being applicable:

Total Petroleum Hydrocarbons (TPH, VPH + EPH)	5 ppm
Benzene	5 ppb
Toluene	*
Ethyl Benzene	*
Xylenes	*
The total for Benzene, Toluene,	
Ethyl Benzene, and Xylenes (BTEX)	100 ppb
Naphthalene	20 ppb
Methyl-tert-Butyl Ether (MtBE)	70 ppb

Should sampling indicate the presence of additional chemicals, discharge concentrations should not exceed the Federal Drinking Water Standards (MCL's) or 100 ppb, whichever is lower, in the effluent.

Solids - These waters shall be free from floating, suspended, and settleable solids in concentrations or combinations that would impair any use assigned to this class, that

would cause esthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom sediments.

Color and Turbidity - These waters shall be free from color and turbidity in concentrations or combinations that are esthetically objectionable conditions or that would impair the use assigned to this class.

Laboratory samples must be obtained from the influent to treatment, and from the effluent to the drainage system once each day for the first, third and sixth day of discharge. These samples must be analyzed with a 72-hour turnaround time. If the system is working properly, sampling for the remainder of the month shall be weekly and then monthly thereafter. The turnaround time for these samples shall ensure that no more than seven days pass between the sampling event and when the results are received and reviewed by the contractor.

If analysis indicates that the effluent limits have been exceeded, then the system must be shut down immediately and the problem corrected. Upon restarting the system, a sample must be taken and there must be 24 hour turnaround for the results. If the analysis indicates that the problem has been corrected, then the sampling schedule shall resume. If not, then the system shall be shut down again and repaired.

5. Analytical Reports, with quality control information, are to be reported to EPA and the MADEP or NHDES Project Manager by the 28th of the following month. Reports to EPA should be sent to:

Mujnicipal Permits Branch (CMP) ATTN: Michael J. O'Brien Office of Ecosystem Protection Environmental Protection Agency One Congress St., Suite 1100 Boston, MA 02114-2023

Please include assigned reference # on all correspondence.

6. You, or your contractor, must maintain copies of all analytical reports, and quality control information for a period of 3 years from the date of the report.

You should consider these requirements to be in effect immediately.

## APPENDIX B

**Laboratory Analytical Reports** 



STL Westfield 53 Southampton Road Westfield, MA 01085

Tel: 413 572 4000 Fax: 413 572 3707 www.stl-inc.com

George Giese URS 477 Congress St. 9th Floor Portland, ME 04101-3432

09/29/2005

Report Number: 229709 RAYNHAM, MA

Dear George Giese,

The analysis of your sample(s) submitted on 09/26/2005 is now complete and the appropriate analytical report is enclosed. The samples were prepared and analyzed according to established methodologies and protocols. All holding times were met for the methods performed on these samples, unless otherwise noted in the report's case narrative.

If you have any questions regarding this report, please contact your Project Manager, Lisa A. Worthington.

For questions, concerns or comments regarding our service, please do not hesitate to contact me directly. Thank you for selecting STL Westfield, and we look forward to working with you on future projects.

Steven C. Hartmann Laboratory Director STL WESTFIELD

Technical Review: # 9.29.05

Total number of pages in this report:

	MADE	MCP An	alytical Met	hod Repoi	t Certific	ation F	orm			
Laboratory Na	me:	Severn Tre	nt Laboratory	(STL) West	<b>field</b> Pro	oject#:	229	709		
Project Location:		Raynham			MADEP	MADEP RTN <sup>1</sup> :				
This form prov 229709-(1-3)	rides certifica	ations for the fo	ollowing data set:	[list Laboratory	Sample ID Nu	ımber(s)]				
Sample Matric	es:	Groundwater	Soil/Se	diment	Drinking Wat		ner:			
		8260B( )	8151A ( )	8330 ( )	6010B ( )	7470A/1/		Other (	)	
	3 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	8270C( ) 8082 ( )	8081A ( ) 8021B ( )	VPH(x) EPH()	6020 ( ) 7000 S <sup>3</sup> ( )	9014M <sup>2</sup> 7196A (	<u>````</u>			
de py Guring Viellymeen van Co		1 List Release 2 M - SW-846	Tracking Numb Method 9014 or Methods 7000 S	er (RTN), if kno MADEP Physic	wn blogically Avai	lable Cyan	ide (PAC)	Method	d	
An affirma	ative respon	nse to questio	ns A, B, C and I	) is required fo	r "Presumpt	ive Certalı	nty" statu	IS		
			the laboratory ir of-Custody docun				CAS	No	o <sup>1</sup>	
<b>B</b> inc	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?							Ne	o <sup>1</sup>	
C for	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, " Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?									
-			y: Was the VPH Section 11.3 of a			thout	(Yes)	N/A	No	
	A response	to questions	E and F below i	s required for '	'Presumptive	e Certainty	" status			
E W	Were all QC performance standards and recommendations for the specified methods achieved?						Yes	<b>Ø</b> 16≥	)	
	Were results for all analyte-list compounds/elements for the specified method(s) reported?							N/A	No	
<sup>1</sup> All	Negative res	sponses must t	oe addressed in a	an attached Env	ironmental La	boratory ca	ase narrat	tive.		
inquiry of the	ose respons	sible for obtain	ains and penaltioning the information	tion, the mate	rial containe	d in this	sonal			
Si	gnature:	St	Herte-		Positio	n: <u>Labora</u>	tory Dire	ctor		
<b>Pri</b> CAM VII A, Rev 3.2	nted Name:	Steven C. Ha	artmann		_ Dat	e: <u> </u>	29.05	April-04		
117, 1187 5.2		MADEP MA014	NELAP FL E87912 TOX		STL Westfield	ę Ti	Billerica Servic	<u> </u>		
SEVERN	CTI	NY DOH 10843	NELAP FL 28/912 TOX		53 Southampton Ro		148 Rangew			
TRENT	OIL	RI DOH 57	NELAP NY 10843	A ACCUACA	Westfield, MA 0108	5	N.Billerica, I			
		CT DPH 0494 VT DECW8D	NH DES 253901-A	S den	Tel:(413)572-4000 Fax:(413)572-3707		Tel:(978)667 Fax:(978)66			

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#### MCP CASE NARRATIVE

Client: URS

Report Number: 229709

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues as stipulated in the MCP reporting requirements.

In order to facilitate report review, a separate MCP Analytical Method Report Certification Form is included for each method requested.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy "MCP program" reporting limits in some cases if the "adjusted" RL is greater that the applicable MCP standards or criterion to which the concentration is being compared. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes, which exceed the calibration range.

Calculations are performed before rounding to avoid round-off errors in calculated results. All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The project samples were received on 09/23/05; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers upon receipt at the Billerica laboratory was 20.4°C; at the Westfield laboratory, 3.8°C.

\* Note: All samples which require thermal preservation are considered acceptable by STL Westfield if the arrival temperature is within ±2°C of the required temperature. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

It is a recognized common industry practice that a sample transported to and received at a laboratory, packed on ice (or blue ice), has maintained its thermal preservation integrity during transfer. It can be argued, with constant warming of the cooler, the samples were maintained at proper temperature for a majority of time spent in transportation. Based on this and the fact that the samples were packed with ice, it is the laboratory's opinion these samples were not compromised.

#### **MADEP VPH**

All QA/QC procedures required for the specified analytical method were performed as per section B of the MADEP MCP analytical method report Certification form.

All QC performance standards and recommendations for this specific method were achieved with the exception of:

The CCV associated with these samples had 0% surrogate recoveries due to the surrogate vial on the instrument running dry. All target compounds recovered within control limits.



General method information:

Due to high target compounds, sample 229709-1 was analyzed at a 5x dilution.

## SAMPLE INFORMATION Date: 09/29/2005

Job Number.: 229709

Customer...: URS

Attn....: George Giese

\*

Project Number....: 20002799 Customer Project ID...: RAYNHAM

Project Description...: Laboratory Analysis-Massachusetts

Laboratory Sample 1D	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229709-1	Influent	Water	09/23/2005	12:25	09/23/2005	13:28
229709-2	Midpoint 1	Water	09/23/2005	13:27	09/23/2005	13:28
229709-3	Effluent	Water	09/23/2005	12:35	09/23/2005	13:28
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LABORATORY TEST RESULTS

Job Number: 229709

Date: 09/29/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

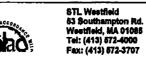
Customer Sample ID: Influent
Date Sampled....: 09/23/2005
Time Sampled....: 12:25
Sample Matrix...: Water

Laboratory Sample ID: 229709-1 Date Received.....: 09/23/2005

Time Received....: 13:28

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
ADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	600 130 ND 330 1000 1300 610 1200 5400 ND 2900 5000 6600	C	25 25 25 25 25 25 250 250 250 250 250 25	Ug/L Ug/L Ug/L Ug/L Ug/L Ug/L Ug/L Ug/L	09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cdi cdi cdi cdi cdi cdi





LABORATORY TEST RESULTS

Job Number: 229709

Date: 09/29/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Midpoint 1
Date Sampled.....: 09/23/2005
Time Sampled.....: 13:27
Sample Matrix....: Water

Laboratory Sample ID: 229709-2 Date Received.....: 09/23/2005

Time Received.....: 13:28

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics VPH Concentration (Total)	ND ND ND ND ND		5.0 5.0 10 5.0 5.0 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cdt cdt cdt cdt cdt cdt cdt cdt

RESULTS LABORATORY TEST

Job Number: 229709

777

Date: 09/29/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Effluent Date Sampled....: 09/23/2005 Time Sampled....: 12:35

Sample Matrix....: Water

Laboratory Sample ID: 229709-3 Date Received.....: 09/23/2005 Time Received.....: 13:28

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	٩	REPORTING LIMIT	UNITS	DATE	TEC
ADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND ND 62 ND ND 62 ND	ט טטטטטטטטט	5.0 5.0 10 5.0 5.0 5.0 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cd cd cd cd cd cd

\* In Description = Dry Wgt.





Page 4

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MADEP MA014 RIDOH57 CTDPH 0494 VT DECWSD NH DES 253903-A

#### LABORATORY CHRONICLE

Job Number: 229709

Date: 09/29/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Lab ID: 229709-1 METHOD MADEP VPH

Client ID: Influent DESCRIPTION Volatile Organics

Date Recvd: 09/23/2005 RUN# BATCH# PREP BT #(S) 1 50372

Sample Date: 09/23/2005 DATE/TIME ANALYZED

09/27/2005 1514

09/27/2005 1250

DILUTION 5.0

Lab ID: 229709-2 METHOD

MADEP VPH

MADEP VPH

Client ID: Midpoint 1 DESCRIPTION **Volatile Organics** 

Date Recvd: 09/23/2005 Sample Date: 09/23/2005 RUN# BATCH# PREP BT #(S)

DATE/TIME ANALYZED

DILUTION

Lab 10: 229709-3 METHOD

Client ID: Effluent DESCRIPTION Volatile Organics

Date Recvd: 09/23/2005 Sample Date: 09/23/2005 RUN# BATCH# PREP BT #(S)

50372

1 50372

DATE/TIME ANALYZED

09/27/2005 1326

DILUTION

## SURROGATE RECOVERIES REPORT

Job Number.: 229709

Report Date.: 09/29/2005

		+ + 877 + 641 + 94	2 100000000A
CUSTOMER: URS	PROJECT: RAYNHAM		ATTN: George Glese

			: Volatile Organics : 50372		d Code Matrix	.: VPH .: Water	Prep Batch: Equipment Code:
Lab ID		DT	Sample ID	Date	25DBTP	25DBTS	
LCD LCS MB 229709- 2 229709- 2	1 2 3		Influent Midpoint 1 Effluent	09/27/2005 09/27/2005 09/27/2005 09/27/2005 09/27/2005 09/27/2005	92.6 91.0 88.5 84.3 80.7 83.1	90.4 86.5 84.0 82.8 86.3 87.3	
Test	Test	Des	cription	Limits			
25DBTP 25DBTS			omotoluene (surr-PID) omotoluene (surr-FID)	70.0 - 130. 70.0 - 130.			

## QUALITY CONTROL RESULTS

Reag. Code

Lab ID

Job Number.: 229709

Description

QC Type

Report Date.: 09/29/2005

Date

Time

Dilution Factor

CUSTOMER: URS PROJECT: RAYNHAM ATTN: George Giese

Test Method.....: MADEP VPH Analyst...: cdt Method Description .: Volatile Organics Batch..... 50372

LCD Laboratory Control Sam	ple Duplicat	e E05	ESPKOO1	9.23 10			09/27/2005 1101
Parameter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc	. * Limits F
Benzene (C5-C8)	ug/L	103.714	102.650	100.000	5.000	U 103.7	70.0-130.0 25.0
Ethylbenzene (C9-C12)	ug/L	104.010	103.284	100.000	5.000	U 104.0 0.7	70.0-130.0 25.0
Methyl-t-butyl ether (C5-C8)	ug/L	97.657	90.906	100.000	5.000	U 97.7 7.2	70.0-130.0 25.0
Naphthalene	ug/L	101.600	102.735	100.000	10.000	U 101.6 1.1	70.0-1 <b>30.</b> 0 25.0
Toluene (C5-C8)	ug/L	102.441	102.309	100.000	5.000	U 102.4 0.1	70.0-1 <b>30.</b> 0 25.0
m&p-Xylenes	ug/L	211.732	209.725	200.000	5.000	U 105.9 1.0	70.0-130.0 25.0
o-Xylene	ug/L	104.098	104.036	100.000	5.000	บ 104.1 0.1	70.0-130.0 25.0
C9-C10 Aromatics	ug/L	305.141	302.188	300.000	50.000	U 101.7 1.0	70.0-130.0 25.0
Unadjusted C5-C8 Aliphatics	ug/L	620.368	613.871	600.000	50.000	U 103.4 1.1	70.0-130.0 25.0
Unadjusted C9-C12 Aliphatics	ug/L	827.735	824.347	800.000	50.000	U 103.5 0.4	70.0-130.0 25.0

\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Job N	umber.: 229709	QUALITY	CONTROL R	ESULTS	Report Date.: 09/2	9/2005	
CUSTOMER: URS		PROJECT	: RAYNHAM		AYTN: George Giese		
QC Type	Description		Reag. Code	Lab ID	Dilution Factor	Date	Time

Analyst...: cdt Test Method.....: MADEP VPH Batch..... 50372 Method Description.: Volatile Organics

LCS Laboratory Control Sample		E05ESPK001			09/27/2005 1025						
Pa	arameter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	e QC Calc.	* Limits	F		
Benzene (C	25-C8)	ug/L	102.650	•	100.000	5.000	U 102.7	70-130			
	ene (C9-C12)	ug/L	103.284		100.000	5.000	U 103.3	70 <b>-13</b> 0			
	outyl ether (C5-C8)	ug/L	90.906		100.000	5.000	U 90.9	70 <b>-130</b>			
Naphthaler		ug/L	102.735		100.000	10.000	บ 102.7	70-1 <b>3</b> 0			
Toluene (C		ug/L	102.309		100.000	5.000	บ 102.3	70-130			
n&p-Xylene	•	ug/L	209.725		200.000	5.000	U 104.9	70-130			
o-Xylene		ug/L	104.036		100.000	5.000	U 104.0	<i>7</i> 0-130			
9-C10 Arc	omatics	ug/L	302.188		300.000	50.000	U 100.7	70-130			
Jnad justed	d C5-C8 Aliphatics	ug/L	613.871		600.000	50.000	U 102.3	70-130			
	C9-C12 Aliphatics	ug/L	824.347		800.000	50.000	ປ 103.0	70-1 <b>3</b> 0			



QUALITY CONTROL RESULTS Report Date.: 09/29/2005 Job Number.: 229709 ATTN: George Giese 🚟 CUSTOMER: URS PROJECT: RAYNHAM Lab ID Dilution Factor Time QC Type Description Reag. Code Date

Test Method.....: MADEP VPH Analyst...; cdt Batch..... 50372 Method Description.: Volatile Organics

MB Method Blank						4			09,	/27/	2005 12	14
Parameter/Test Description	Units	QC Result		QC Result	True Value	Orig.	Value	QC Ca	ılc.	*	Limits	ı
Benzene (C5-C8)	ug/L	5.000	_U									
Ethylbenzene (C9-C12)	ug/L	5.000	U									
Methyl-t-butyl ether (C5-C8)	ug/L	5.000	U									
Naphthalene	ug/L	10.000	U									
Toluene (C5-C8)	ug/L	5.000	U									
m&p-Xylenes	ug/L	5.000	Ų									
o-Xyl ene	ug/L	5.000	Ų									
Xylene (total) (C9-C12)	ug/L	5.000	U									
C5-C8 Aliphatics	ug/L	50.000	U									
C9-C10 Aromatics	ug/L	50.000	U									
C9-C12 Aliphatics	ug/L	50.000	U									
Unadjusted C5-C8 Aliphatics	ug/L	50.000	U									
Unadjusted C9-C12 Aliphatics	ug/L	50.000	U								•	
VPH Concentration (Total)	ug/L	50.000	U	•								



\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

MADEP MA014 RIDOH57 CTDPH 0494 VT DECW8D NH DES 253903-A

## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 09/29/2005

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## LABORATORY CERTIFICATIONS:

MADEP MA014, NY NELAC 10843, NJ NELAC MA008 (TOX), FL NELAC E87912 (TOX), CT DPH 0494, NY DOH 10843, NH DES 253901-A, VT DECWSD, RI DOH 57.

### LOCATION:

STL Westfield: 53 Southampton Rd, Westfield, MA 01085. Phone: (413) 572-4000 Fax: (413) 572-3707

STL Service Center: 148 Rangeway Rd. N. Billerica, MA 01862. Phone: (978) 667-1400 Fax: (978) 667-7871

## DATA REPORTING QUALIFIERS AND TERMINOLOGY:

A number of data qualifiers are widely used within the environmental testing industry and may be utilized in our data reports. The majority of the qualifiers have evolved from the EPA Contract Laboratory Program (CLP).

#### REPORT COMMENTS:

All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Soil, sediment and sludge sample results are reported on a "dry weight" basis.

Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert.ID# 10843.

According to 40CFR Part 136.3, pH, Total Residual Chlorine and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field analyses, they were not analyzed immediately, but as soon as possible on laboratory receipt.

Analytical result(s) reported as "ND" and/or "U", indicates the analyte was analyzed for but "Not Detected." Analytical result(s) reported as "TNTC" indicates that the microbiological test was "Too Numerous To Count."

## GLOSSARY OF QUALIFIERS:

## Inorganic Qualifiers (Q-column):

U indicates that the analyte was analyzed for but not detected.

- E Indicates an estimated value due to the presence of interference. When applied to GFAA analysis, indicates the one-point method of addition recovered between 40-85 percent.
- B Indicates an estimated result value. The result was measured between the reporting limit and the method detection limit (MDL).
- H Indicates the compound/element was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination.

## Organic Qualifiers (Q-column):

I Indicates that the compound was analyzed for but not detected.

- J Indicates an estimated result value. This qualifier is used when mass spectral data indicated the presence of a compound that meets the identification criteria and the result is less than the specified quantitation limit, but greater than the method detection limit (MDL).
- B Indicates that the compound was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination and warns the data user to exercise caution when applying the results to this compound.
- D Indicates all compounds identified in an analysis at a secondary dilution factor.
- E Indicates that the compound in an analysis has exceeded the instrument linear calibration range.

## QUALITY ASSURANCE NETHODS

## REFERENCES AND NOTES

Report Date: 09/29/2005

## GLOSSARY OF TERMS:

Surrogates (Surrogate Standards): An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but are not normally found in environmental samples. For semi-volatiles and pesticides/Arochlors, surrogate compounds are added to every blank, sample, matrix spike, matrix spiked duplicate, matrix spike blank (LCS), and standard. These compounds are used to evaluate analytical efficiency by measuring recovery. Poor surrogate recovery may indicate a problem with the sample composition.

Internal Standard: An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process. For GC/MS semi-volatiles and volatiles, internal standards are added to every blank, sample, matrix spike, matrix spike duplicate, matrix spike blank (LCS), and standard. Internal standard responses outside of established limits will adversely affect the quantitation and final concentration of target compounds.

Matrix Spike (MS): An aliquot of a sample (water or soil) fortified (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for matrix interference by measuring recovery. The spiking occurs prior to sample preparation and analysis. Poor spike recovery may indicate a problem with the sample composition.

Laboratory Control Sample (LCS): An aliquot of analyte-free reagent water or sand fortifed (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method efficiency.

Blank: An artificial sample of analyte-free water or solvent, designed to monitor the introduction of contaminates into the analytical process.

Method Dectection Limit (MDL): The minimum concentration of an analyte or compound that can be measured and reported with 99% confidence that the result concentration is greater than zero.

## Petroleum Hydrocarbon Comments:

The following comments are specific to Diesel Range Organics (DRO), by GC/FID:

Results for DRO are based on chromatographable portions of the petroleum product. The Carbon Range refers to the approximate chromatographic region covered by the specified petroleum product in straight-chain carbon units between C9-C36.

Quantitation is based on the average response factors for a series of hydrocarbons standards. The sample result from the DRO fraction is independent of the target compound assignment.

Samples yielding chromatographic patterns that do not agree with any of the method targets are reported as "unmatched".



## VED SAMPLE INFORMATION PATA

AMPLE INFORMATI	ON	GD2 70	
Sample ID:	<u>2001709</u>	Batch#	-
ətrix	Aqueous	Soil Sediment Other	
ontainers	Satisfactory	Broken Leaking:	
	Aqueous	□ N/A pH<2 □ pH>2 Comment:	
	(acid Preserved)	□ N/A □ pH<11 □ pH>11 Comment:	
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)	N/A Samples NOT preserved in Methanol or air-tight	g Soll/sediment
ample	Soil or		mL Methanol
reservatives		container Samples rec'd in Methanol: Covering soil/sediment	1:1 +/-25%
	Sediment	not covering soil/sediment	
			Other:
		Samples received in air-tight container:  Received at 4°C ± 2°C  Other: >0.4°C	TEJ Outer.
emperature	Received on Ice	Received at 4°C ± 2°C Other: 30.4°C	
Sample II	: <u>28970</u>	7-2 Batch# <u>90372</u>	_
Matrix	Aqueous	Soil Sediment Other	
Containers	Satisfactory	Broken Leaking:	
	Aqueous	□ N/A  pH<2 □ pH>2 Comment:	
	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
Sample	Soil or	N/A Samples NOT preserved in Methanol or air-tight	g Soil/sediment/
Preservatives		container	mL Methanol
	Sediment	Samples rec'd in Methanol: covering soil/sediment	1:1 +/-25%
		not covering soil/sediment	<b>-</b>
		Samples received in air-tight container:	Other:
Temperature	C-Received on Ice	Officer of the original of the	
	DE 20070		_
Matrix	Aqueous	Soil Sediment Uniter  Broken Leaking:	
Containers	Satisfactory		
	Aqueous	□ N/A PPH<2 □ pH>2 Comment:	
A.	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
Sample	Soil or	□ N/A □ Samples NOT preserved in Methanol or air-tight	g Soil/sediment/
Preservatives		container	mL Methanol
	Sediment	Samples rec'd in Methanol: covering soll/sediment	1:1 +/-25%
		not covering soil/sediment	
		Samples received in air-tight container:	☐ Other:
Temperature	Received on Ic	College Officer	
Tomporature	<u> </u>		

SEVERN TRENT

STL

MADEP MA 014
RIDOH57
CTDPH 0494
VT DECWSD
NH DES 253903-A

NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NYDOH 10843



STL Westfield

53 Southampton Rd. Westfield, MA 01085 Tel:(413)572-4000 Fax:(413)572-3707 STL Billerica-Service Center

148 Rangeway Rd. N. Billerica, MA 01862 Tel:(978)667-1400 fax:(978)867-7871

rpjsckl Job Samp	le Receipt Checklist Report	V2
Customer Job ID: Job C	ist Number.: 1 Description.: heck List Date.: Laboratory Analysis-Massachusetts Contact.: George Giese	Date of the Report: 09/26/2005 Project Manager: law
- Questions ? (	Y/N) Comments	
Chain-of-Custody Present?		•
If "yes", completed property?		
Custody seal on shipping container?	N	
If "yes", custody seal intact?		
Custody seals on sample containers?	N	
If "yes", custody seal intact?		
Samples iced?	Υ .	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	
Temperature at receipt	3.8 C	
Samples received intact (good condition)?	Υ	
Volatile samples acceptable? (no headspace)	Y	
ls a Trip Blank required?	N	
Was a Trip Blank provided?	N	
Correct containers used?	Υ	·
Adequate sample volume provided?	Υ	
Samples preserved correctly?	Y	
Samples received within holding-time?	Y	
Agreement between COC and sample labels?	Υ	
Comments	stl pickup	
If samples were shipped was there an air bill #?		
Sample Custodian Signature/Date	kar 09262005 1/AA abab	,
This is Page 1(A)	kar 09262005 WAR 9/26/00	
-		

# **Severn Trent Laboratories, Inc.**Chain of Custody Form



245/1

•33 Southampton Road Westfield, MA 01085 (P) 413-572-4000 (F) 413-572-3707 e149 Rangeway Road N. Billerica, MA 01862; (P) 978-667-1400 (F) 978-887-7871

STL Westfield

(P) 978-667-1400 (F) 978-887-7871 STL Billerics / Service Center

																		_									
Client: URS Coa	mation				Projec	t#:	3	a L		91	91		34	00	4	Jo		24	<i>ገ</i> ለ'	7		2uote		PO#			
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## SAMPLE INFORMATION Date: 09/27/2005

Job Number.: 229709 Customer...: URS Attn.....: George Giese

Project Number.....: 20002799 Customer Project ID...: RAYNHAM Project Description...: Laboratory Analysis-Massachusetts

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229709-1	Influent	Water	09/23/2005	12:25	09/26/2005	14:07
229709-2	Midpoint 1	Water	09/23/2005	13:27	09/26/2005	14:07
229709-3	Effluent	Water	09/23/2005	12:35	09/26/2005	14:07
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LABORATORY TEST RESULTS

Job Number: 229709

PROJECT: RAYNHAM ATTN: George Giese

Customer Sample ID: Influent Date Sampled....: 09/23/2005
Time Sampled....: 12:25
Sample Matrix...: Water

CUSTOMER: URS

Laboratory Sample ID: 229709-1 Date Received.....: 09/26/2005 Time Received.....: 14:07

Date: 09/27/2005

ا ا

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	ĮQ	REPORTING LIMIT	UNITS	DATE	TECH
TEST METHOD    MADEP VPH    I	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) msp-Xylenes c-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	600   130   ND 330   1000   ND 1200		25 25 25 25 50 25 25 25 25 250 250 250	UNITS  ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/	DATE 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cdt   cdt
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<sup>\*</sup> In Description = Dry Wgt.

## LABORATORY TEST RESULTS

Job Number: 229709

Date: 09/27/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Midpoint 1
Date Sampled.....: 09/23/2005
Time Sampled.....: 13:27
Sample Matrix....: Water

Laboratory Sample ID: 229709-2
Date Received.....: 09/26/2005
Time Received.....: 14:07

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	ļΩ	REPORTING LIMIT	UNITS	DATE	TECI
MADEP VPH	Volatile Organics	1				Ţ	[
	Benzene (C5-C8)	ND	וַט	5.0	ug/L	09/27/05	cat
	Ethylbenzene (C9-C12)	ND	ΰ	5.0	ug/L	09/27/05	
	Methyl-t-butyl ether (C5-C8)	ND	ΙŪ		ug/L	09/27/05	cdt
	Naphthalene	ND	Ιŭ		ug/L	09/27/05	Cat
	Toluene (C5-C8)	ND	IJ		ug/L	09/27/05	l and
			וטו				
	m&p-Xylenes	ND	l <sub>0</sub>		ug/L	09/27/05	icat
	o-Xylene	ND		ı ı	ug/L	09/27/05	cdt
	C5-C8 Aliphatics	ND	¦υ		ug/L	09/27/05	cdt
	C9-C10 Aromatics	ND	ָט'ְ	50	ug/L	09/27/05	cdt
	C9-C12 Aliphatics	ND	Ü	50	ug/L	09/27/05	cdt
	Unadjusted C5-C8 Aliphatics	ND	U	50	ug/L	09/27/05	cdt
	Unadjusted C9-C12 Aliphatics	ND	1 <sub>U</sub>	50	ug/L	09/27/05	COL
	VPH Concentration (Total)	ND	Ιŭ	50	ug/L	09/27/05	Code
	VIII CONCENCIACION (TOCAL)	1 110	1	! 30 1	ug/ L	109/2//03	Tucc
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<sup>\*</sup> In Description = Dry Wgt.

#### LABORATORY TEST RESULTS

Job Number: 229709

Date: 09/27/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Effluent
Date Sampled.....: 09/23/2005
Time Sampled.....: 12:35
Sample Matrix....: Water

Laboratory Sample ID: 229709-3
Date Received.....: 09/26/2005
Time Received.....: 14:07

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TECH
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) msp-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND		10 5.0 5.0 5.0 50 50 50 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05   09/27/05	cdt cdt cdt cdt cdt cdt cdt cdt cdt cdt
	 	                         				1 1 1 1 1 1 1 1 1	 
		 				- 	
	 	 		1 	 	 	 

<sup>\*</sup> In Description = Dry Wgt.

## LABORATORY CHRONICLE

Job I	Number: 229709		Date: (	09/27/2005	
CUSTOMER: URS	PROJEC	T: RAYNHAM	·	ATTN: George Giese	
Lab ID: 229709-1   METHOD   EDD   PKG SGC	Client ID: Influent DESCRIPTION Electronic Data Deliverable PKG SGC-EPH, VPH, ETPH, 8100, 8015, DRO, GRO	Date Recvd: 09/26/ RUN# BATCH# PF 1		Date: 09/23/2005 DATE/TIME ANALYZED	DILUTION
MADEP VPH	Volatile Organics	1 50372		09/27/2005 1514	5.0
Lab ID: 229709-2   METHOD   MADEP VPH	Client ID: Midpoint 1 DESCRIPTION Volatile Organics	Date Recvd: 09/26/ RUN# BATCH# PF 1 50372	/2005 Sample REP BT #(S)	Date: 09/23/2005 DATE/TIME ANALYZED 09/27/2005 1250	DILUTION
Lab ID: 229709~3 METHOD MADEP VPH	Client ID: Effluent DESCRIPTION Volatile Organics	Date Recvd: 09/26/ RUN# BATCH# PF 1 50372	/2005 Sample REP BT #(S)	Date: 09/23/2005 DATE/TIME ANALYZED 09/27/2005 1326	DILUTION

## SURROGATE RECOVERIES REPORT

Job Number.: 229709

Report Date.: 09/27/2005

CUSTOMER: URS	PROJECT: RAYNHAM			ATTN: George Giese
Method: Volatile Organ Batch(s): 50372		od Code Matrix	.: VPH	Prep Batch: Equipment Code:
Lab ID DT Sample ID	Date	25DBTP	25DBTS	
CCD	09/27/2005	92.6	90.4	
cs	09/27/2005		86.5	
∕B	09/27/2005		84.0	
229709- 1 Influent	09/27/2005	84.3	82.8	
229709- 2 Midpoint 1	09/27/2009	80.7	86.3	
229709- 3 Effluent	09/27/2005	83.1	87.3	
Test Test Description	Limits			
25DBTP 2,5-Dibromotoluene (surr-				
SDBTS 2.5-Dibromotoluene (surr-	'ID) 70.0 - 130.			



STL Westfield 53 Southampton Road Westfield, MA 01085

Tel: 413 572 4000 Fax: 413 572 3707 www.stl-inc.com

George Giese URS 477 Congress St. 9th Floor Portland, ME 04101-3432

09/30/2005

Report Number: 229698 RAYNHAM

Dear George Giese,

The analysis of your sample(s) submitted on 09/26/2005 is now complete and the appropriate analytical report is enclosed. The samples were prepared and analyzed according to established methodologies and protocols. All holding times were met for the methods performed on these samples, unless otherwise noted in the report's case narrative.

If you have any questions regarding this report, please contact your Project Manager, Lisa A. Worthington.

For questions, concerns or comments regarding our service, please do not hesitate to contact me directly. Thank you for selecting STL Westfield, and we look forward to working with you on future projects.

Steven C. Hartmann Laboratory Director STL WESTFIELD

Technical Review: 49.30.05

Total number of pages in this report: 21

	MADE	P MCP A	nalytical Me	thod Repor	t Certifica	ation Fo	rm		
aboratory	/ Name:	Severn Tr	ent Laborator	y (STL) West	<b>fleid</b> Pro	ject #:	229	598	
Project Lo	cation:	Raynham			MADEP	RTN <sup>1</sup> :			
This form 229698-(1	*	cations for the	following data se	t:[list Laboratory s	Sample ID Nu	mber(s)]			<del></del>
Sample M	·	Groundwat	Spil/S	ediment	Drinking Wate	er Othe	\r.		<del></del>
Dample W	atrices.	8260B( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A (		Other (	1
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<b>建</b>	44. VES	8082 ( )	'8021B ( )	EPH()	7000 S³( )	7196A ( )			
Či Z		2 M - SW-8	se Tracking Num 46 Method 9014 o 46 Methods 7000	or MADEP Physic	logically Avail		e (PAC)	Metho	d
An aff	irmative respo	onse to quest	ions A, B, C and	D is required fo	r "Presumpti	ve Certaint	y" statu	8	
Α	1	•	by the laboratory i -of-Custody docu				Yes	N	o <sup>1</sup>
В	included in th	is report follow narrative QC d	s required for the yed, including the ata that did not mo	requirement to no	ote and		<b>Yes</b> >	N	o¹
С	for "Presump the MADEP of	tive Certainty". locument CAN	cluded in this repo , as described in S If VII A, " Quality A Acquisition and Re	Section 2.0 (a), (b Assurance and Qu	o), (c) and (d) outlined	of	(Yes)	N/A	No <sup>1</sup>
D			nly: Was the VPH se Section 11.3 of			hout	Yes	N/A	No
	A respons	e to question	s E and F below	is required for "	Presumptive	Certainty"	status		
E	Were all QC		standards and rec					(B)	<del></del>
F	Were results method(s) re	_	-list compounds/e	lements for the s	pecified		Yes	N/A	No
1	All Negative re	esponses mus	t be addressed in	an attached Env	ironmental Lal	ooratory cas	e narrati	ve.	
inquiry o	f those respor	sible for obta	pains and penalt aining the inform y knowledge and	ation, the mater	rial contained	in this	onal		
	Signature:	Ele	Horte		Position	: Laborato	ry Direc	tor	
CAM VII A, Rev	Printed Name	: Steven C.	Hartmann		Date	:: <u>9·3</u>	0.05	April-04	<del> </del>
- un en el l'es		MADEP MA014	NELAP FL E87912 TOX		STL Westfield	eti bu	llerica Servic	····	
SEVER		MADEP MA014 NY DOH 10843 RI DOH 57 CT DPH 0494	NELAP NJ MAGOS TOX NELAP NY 10843 NH DES 253901-A		53 Southampton Rd, Westfield, MA 01085 Tel:(413)572-4000		148 Rangewa N.Billerica, M	sy Rd IA 01862	
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## MCP CASE NARRATIVE

Client: URS

Report Number: 229698

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues as stipulated in the MCP reporting requirements.

In order to facilitate report review, a separate MCP Analytical Method Report Certification Form is included for each method requested.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy "MCP program" reporting limits in some cases if the "adjusted" RL is greater that the applicable MCP standards or criterion to which the concentration is being compared. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes, which exceed the calibration range.

Calculations are performed before rounding to avoid round-off errors in calculated results. All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The project samples were received on 09/26/05; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers upon receipt at the laboratory was 17.8°C.

\* Note: All samples which require thermal preservation are considered acceptable by STL Westfield if the arrival temperature is within ±2°C of the required temperature. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

It is a recognized common industry practice that a sample transported to and received at a laboratory, packed on ice (or blue ice), has maintained its thermal preservation integrity during transfer. It can be argued, with constant warming of the cooler, the samples were maintained at proper temperature for a majority of time spent in transportation. Based on this and the fact that the samples were packed with ice, it is the laboratory's opinion these samples were not compromised.

## **MADEP VPH**

All QA/QC procedures required for the specified analytical method were performed as per section B of the MADEP MCP analytical method report Certification form.

All QC performance standards and recommendations for this specific method were achieved with the exception of:

The CCV associated with these samples had 0% surrogate recoveries due to the surrogate vial on the instrument running dry. All target compounds recovered within control limits.







## SAMPLE INFORMATION

Date: 09/30/2005

Job Number.: 229698

Customer...: URS

Attn....: George Giese

Project Number.....: 20002799 Customer Project ID...: RAYNHAM

Project Description...: Laboratory Analysis-Massachusetts

78

10.565 1.8865

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229698-1	Influent	Water	09/25/2005	09:30	09/26/2005	13:55
229698-2	Effluent	Water	09/25/2005	09:00	09/26/2005	13:55
229698-3	Midpoint #1	Water	09/25/2005	09:35	09/26/2005	13:55
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LABORATORY TEST RESULTS

Job Number: 229698

Date: 09/30/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Influent
Date Sampled.....: 09/25/2005
Time Sampled.....: 09:30
Sample Matrix....: Water

Laboratory Sample ID: 229698-1 Date Received.....: 09/26/2005 Time Received.....: 13:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	6.8 ND 50 16 25 16 190 660 ND 210 380 850	טט	5.0 5.0 10 5.0 5.0 5.0 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cdi cdi cdi cdi cdi cdi cdi

TEST RESULTS LABORATORY

Job Number: 229698

Date: 09/30/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Effluent Date Sampled....: 09/25/2005 Time Sampled....: 09:00 Sample Matrix....: Water

Laboratory Sample ID: 229698-2 Date Received.....: 09/26/2005 Time Received.....: 13:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND ND ND ND ND ND ND N	נטטטטטטטטטטטט	5.0 5.0 10 5.0 5.0 5.0 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05 09/27/05	cdt cdt cdt cdt cdt cdt cdt cdt cdt

\* In Description = Dry Wgt.







RESULTS LABORATORY TEST

Job Number: 229698

Date: 09/30/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Midpoint #1 Date Sampled....: 09/25/2005 Time Sampled....: 09:35 Sample Matrix....: Water

Laboratory Sample ID: 229698-3 Date Received.....: 09/26/2005

Time Received.....: 13:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND 230 ND 100 180 330	ט טטטטטטט	5.0 10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05 09/28/05	tjs tjs tjs tjs tjs tjs tjs tjs
				·			

In Description = Dry Wgt.



Page 4



MADEP MA014 RIDOH57 CTDPH 0494 VT DECWSD

## LABORATORY CHRONICLE

Job Number: 229698

Date: 09/30/2005

CUSTOMER: URS PROJECT: RAYNHAM

ATTN: George Giese

Lab ID: 229698-1 METHOD MADEP VPH Client ID: Influent DESCRIPTION Volatile Organics Date Recvd: 09/26/2005 Sample Date: 09/25/2005

RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION
1 50372 09/27/2005 1438

RUN# BATCH# PREP BT #(S)

50476

Lab ID: 229698-2 METHOD

MADEP VPH

MADEP VPH

Client ID: Effluent DESCRIPTION Volatile Organics Date Recvd: 09/26/2005 Sample Date: 09/25/2005
RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION

Lab ID: 229698-3 METHOD Client ID: Midpoint #1
DESCRIPTION
Volatile Organics

1 50372 09/27/2005 1550

Date Recvd: 09/26/2005 Sample Date: 09/25/2005

DATE/TIME ANALYZED DILUTION 09/28/2005 1433

## SURROGATE RECOVERIES REPORT

Job Number.: 229698

Report Date.: 09/30/2005

•			·;· ·	.70/co
CUSTOMER: URS	PROJECT: RA	AYNHAM	ATTN:	George Giese

			: Volatile Organics : 50372 50476		thod Code. It Matrix.		Prep Batch: Equipment Code:	
Lab ID		DT	Sample ID	Date	2508TP	25DBTS		
.D				09/27/20	92.6	90.4		
CD.				09/27/20	<b>35 89.6</b>	81.2		
LCS				09/27/20	91.0	86.5		
LCS				09/27/20	94.0	84.8		
3				09/27/20	05 88.5	84.0		
3				09/27/20	90.4	82.0		
_29698-	1		Influent	09/27/20	05 86.8	85.1		
229698-	2		Effluent	09/27/20	5 83.5	84.7		
229698-	3		Midpoint #1	09/28/20	75.5	78.7		
Test		Test Des	scription	Limits				
25DBTP 5DBTS		•	romotoluene (surr-PID)	70.0 - 130. 70.0 - 130.				



#### RESULTS CONTROL QUALITY

Job Number.: 229698

Report Date.: 09/30/2005

CUSTOMER: U		OJECT: RAYNHAM	7 (H	ATTN: George Giese		
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: MADEP VPH

Method Description.: Volatile Organics

Batch..... 50372

Analyst...: cdt

LCD	Laboratory Control Same	ale Duplicate	E051	ESPK001			09	09/27/2005 1101		
Para	meter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	* Limits		
lenzene (C5-	C8)	ug/L	103.714	102.650	100.000	5.000	U 103.7 1.0	70.0-130.0 25.0		
thylbenzene	(C9-C12)	ug/L	104.010	103.284	100.000	5.000	U 104.0 0.7	70.0-130.0 25.0		
lethyl-t-but	yl ether (C5-C8)	ug/L	97.657	90.906	100.000	5.000	U 97.7 7.2	70.0-130.0 25.0		
Iaphthal ene		ug/L	101.600	102.735	100.000	10.000	U 101.6 1.1	70.0-130.0 25.0		
oluene (C5-	C8)	ug/L	102.441	102.309	100.000	5.000	U 102.4 0.1	70.0-130.0 25.0		
åp-Xylenes		ug/L	211 <b>.732</b>	209.725	200.000	5.000	U 105.9 1.0	70.0-130.0 25.0		
-Xylene		ug/L	104.098	104.036	100.000	5.000	U 104.1 0.1	70.0-130.0 25.0		
9-C10 Aroma	atics	ug/L	305.141	302.188	300.000	50.000	U 101.7 1.0	70.0-130.0 25.0		
inadjusted (	C5-C8 Aliphatics	ug/L	620.368	613.871	600.000	50.000	U 103.4 1.1	70.0-130.0 25.0		
Jnadjusted (	09-C12 Aliphatics	ug/L	827.735	824.347	800.000	50.000	U 103.5 0.4	70.0-130.0 25.0		

	Job Number.: 229698	QUALITY	CONTROL	RESULTS	Report Date.: 09/3	0/2005	
CUSTOMER: UR	s	PROJEC	T: RAYNHAM		ATTN: George Giese	<u> </u>	
QC Type	Description		Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: MADEP VPH
Method Description: Volatile Organics Analyst...: cdt Batch..... 50372

LCS	Laboratory Control Sam	ple	E05	ESPKO01	·		0	9/27/2005 102
Pa	rameter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	* Limits
enzene (C	:5-C8)	ug/L	102.650		100.000	5.000 U	102.7	70-130
thylbenze	ne (C9-C12)	ug/L	103.284		100.000	5,000 U	103.3	70-130
iethyl-t-k	outyl ether (C5-C8)	ug/L	90.906		100.000	5.000 U	90.9	70-130
iaphthaler	ne	ug/L	102. <b>73</b> 5		100.000	10.000 U	102.7	70-130
oluene (C	:5-C8)	ug/L	102.309		100.000	5.000 U	102.3	70-130
&p-Xylene	es	ug/L	209.725		200.000	5.000 U	104.9	70-130
-Xylene		ug/L	104.036		100.000	5.000 U	104.0	70-130
9-010 Arc	matics	ug/L	302.188		300.000	50.000 U	100.7	70-130
nadjusted	1 C5-C8 Aliphatics	ug/L	613.871		600.000	50.000 U	102.3	70-130
nadjusted	I C9-C12 Aliphatics	ug/L	824.347		800.000	50.000 U	103.0	70-130



RESULTS QUALITY CONTROL Report Date.: 09/30/2005 Job Number.: 229698 ATTN: George Giese PROJECT: RAYNHAM 300 25 70 CUSTOMER: URS Time Date Dilution Factor Reag. Code Lab 10 Description QC Type Analyst...: cdt Test Method..... MADEP VPH Batch..... 50372 Method Description .: Volatile Organics

МВ	Method Blank		1 V (1)	.556	\$ 	ain.		× × ×		400.	09/27	/2005	1214
	ter/Test Description	Units	QC Result		QC Result	Tru	e Value		Value	QC Cal	c. *	Limi	ts
Benzene (C5-C8 Ethylbenzene ( Methyl-t-butyl Naphthalene Toluene (C5-C8 m&p-Xylenes o-Xylene Xylene (total) C5-C8 Aliphati C9-C10 Aromati C9-C12 Aliphat Unadjusted C5-	c9-C12) ether (C5-C8)  (C9-C12) ics ics ics -C8 Aliphatics -C12 Aliphatics	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	5.000 5.000 10.000 5.000 5.000 5.000 50.000 50.000 50.000 50.000	000000000000000000000000000000000000000									

J	ob Number.: 229698	QUALITY	CONTROL	RESULTS	Report Date.: 09/3	0/2005	
CUSTOMER: URS		PROJE	CT: RAYNHAM		ATTN: George Giese		
QC Type	Descripti	on	Reag. Code	Lab ID	Dilution Factor	Date	Time

Analyst...: tJs Test Method.....: MADEP VPH Batch..... 50476 Method Description .: Volatile Organics

LCD Laboratory Control Sam	ple Duplicat	e E05	ESPK001			. 09	/27/2005 1936
Parameter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	* Limits
enzene (C5-C8)	ug/L	100.697	101.118	100.000	5.000	U 100.7 0.4	70.0-130.0 25.0
thylbenzene (C9-C12)	ug/L	107.144	107.499	100.000	5.000	U 107.1 0.3	70.0-130.0 25.0
ethyl-t-butyl ether (C5-C8)	ug/L	122.397	120.114	100.000	5.000	U 122.4 1.9	70.0-130.0 25.0
aphthalene	ug/L	102.644	100.786	100.000	10.000	U 102.6 1.8	70.0-130.0 25.0
oluene (C5-C8)	ug/L	103.191	104.165	100.000	5.000	U 103.2 0.9	70.0-130.0 25.0
&p-Xylenes	ug/L	211.930	212.221	200.000	5.000	บ 106.0 0.1	70.0-130.0 25.0
-Xyl ene	ug/L	107.831	107.667	100.000	5.000	U 107.8 0.2	70.0-130.0 25.0
9-C10 Aromatics	ug/L	315.593	314.346	300.000	50.000	U 105.2 0.4	70.0-130.0 25.0
Inadjusted C5-C8 Aliphatics	ug/L	707.790	716.017	600.000	50.000	U 118.0 1.2	70.0-130.0 25.0
Inadjusted C9-C12 Aliphatics	ug/L	856.072	862.590	800.000	50.000	U 107.0 0.8	70.0-130.0 25.0



Job Number.: 229698

QUALITY CONTROL RESULTS

Report Date.: 09/30/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

QC Type

Description

Reag. Code

Lab ID

Dilution Factor

Date

Time

Test Method.....: MADEP VPH Analyst...: tjs
Method Description: Volatile Organics Batch.....: 50476

LCS Laboratory Control S		ol <b>e</b>	E05	ESPKOD1	3		09/27/2005 1856				
Pa	rameter/Test Description	Ųnits	QC Result	QC Result	True Value	Orig. Value	QC Calc.	* Limits F			
Benzene (C	5-C8)	ug/L	101.118		100.000	5.000 U	101.1	70-130			
	ne (C9-C12)	ug/L	107.499		100.000	5.000 U	107.5	70-130			
•	outyl ether (C5-C8)	ug/L	120.114		100.000	5.000 U	120.1	70-130			
Naphthalen	ie .	ug/L	100.786		100.000	10.000 U	100.8	70-130			
Toluene (C	5-08)	ug/L	104.165		100.000	5.000 U	104.2	70-130			
m&p-Xylene	es ·	ug/L	212.221		200,000	5.000 U	106.1	70-130			
o-Xylene		ug/L	107.667		100.000	5.000 U	107.7	70-130			
C9-C10 Aro	matics	ug/L	314.346		300.000	50.000 U	104.8	70-130			
Unadjusted	C5-C8 Aliphatics	ug/L	716.017		600.000	50.000 U	119.3	70-130			
	C9-C12 Aliphatics	ug/L	862.590		800.000	50.000 U	107.8	70-130			



YEX DEC RERPO

QUALITY CONTROL RESULTS Report Date.: 09/30/2005 Job Number.: 229698 PROJECT RAYNHAM ATTN: George Giese CUSTOMER: URS Lab ID Dilution Factor Date Time Description Reag. Code QC Type Analyst...: tjs Test Method.....: MADEP VPH Batch....: 50476 Method Description .: Volatile Organics

МВ	Method Blank				749 449			09/27/2005 2216			
P	arameter/Test Description	Units	QC Result		QC Result	True Value	Orig. Value	QC Calc.	*	Limits	
enzene (	C5-C8)	ug/L	5.000								
thylbenz	ene (C9-C12)	ug/L	5.000	Ų							
Methyl-t-	butyl ether (C5-C8)	ug/L	5.000	IJ							
Naphthale	ene	ug/L	10.000	U							
oluene (	C5-C8)	ug/L	5.000	U							
&p-Xyler	nes	ug/L	5.000	U							
o-Xylene		ug/L	5.000	U							
Xylene (t	otal) (C9-C12)	ug/L	5.000	u							
75-C8 ALI	phatics	ug/L	50.000	U							
9-C10 Ar	omatics	ug/L	50.000	U							
.9-C12 AL	iphatics	ug/L	50.000	Ų							
	ed C5-C8 Aliphatics	ug/L	50.000	U							
	ed C9-C12 Aliphatics	ug/L	50.000	U							
. •	entration (Total)	ug/L	50,000	U							

## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 09/30/2005

SIL WESTFIELD is part of Severn Trent Laboratories, Inc. Visit us at www.stl-inc.com.

## LABORATORY CERTIFICATIONS:

MADEP MA014, NY NELAC 10843, NJ NELAC MA008 (TOX), FL NELAC E87912 (TOX), CT DPH 0494, NY DOH 10843, NH DES 253901-A, VT DECWSD, RI DOH 57.

## LOCATION:

STL Westfield: 53 Southampton Rd, Westfield, MA 01085. Phone: (413) 572-4000 Fax: (413) 572-3707

\$TL Service Center: 148 Rangeway Rd. N. Billerica, MA 01862. Phone: (978) 667-1400 Fax: (978) 667-7871

## DATA REPORTING QUALIFIERS AND TERMINOLOGY:

A number of data qualifiers are widely used within the environmental testing industry and may be utilized in our data reports. The majority of the qualifiers have evolved from the EPA Contract Laboratory Program (CLP).

## REPORT COMMENTS:

All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Soil, sediment and sludge sample results are reported on a "dry weight" basis.

Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert.ID# 10843.

According to 40CFR Part 136.3, pH, Total Residual Chlorine and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field analyses, they were not analyzed immediately, but as soon as possible on laboratory receipt.

Analytical result(s) reported as "ND" and/or "U", indicates the analyte was analyzed for but "Not Detected." Analytical result(s) reported as "TNTC" indicates that the microbiological test was "Too Numerous To Count."

## GLOSSARY OF QUALIFIERS:

## Inorganic Qualifiers (Q-column):

U Indicates that the analyte was analyzed for but not detected.

- E Indicates an estimated value due to the presence of interference. When applied to GFAA analysis, indicates the one-point method of addition recovered between 40-85 percent.
- B Indicates an estimated result value. The result was measured between the reporting limit and the method detection limit (MDL).
- H Indicates the compound/element was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination.

## Organic Qualifiers (Q-column):

U Indicates that the compound was analyzed for but not detected.

- J Indicates an estimated result value. This qualifier is used when mass spectral data indicated the presence of a compound that meets the identification criteria and the result is less than the specified quantitation limit, but greater than the method detection limit (MDL).
- B Indicates that the compound was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination and warns the data user to exercise caution when applying the results to this compound.

Indicates all compounds identified in an analysis at a secondary dilution factor.

E Indicates that the compound in an analysis has exceeded the instrument linear calibration range.



e S

## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 09/30/2005

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#### GLOSSARY OF TERMS:

- Surrogates (Surrogate Standards): An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but are not normally found in environmental samples. For semi-volatiles and pesticides/Arochlors, surrogate compounds are added to every blank, sample, matrix spike, matrix spiked duplicate, matrix spike blank (LCS), and standard. These compounds are used to evaluate analytical efficiency by measuring recovery. Poor surrogate recovery may indicate a problem with the sample composition.
- Internal Standard: An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process. For GC/MS semi-volatiles and volatiles, internal standards are added to every blank, sample, matrix spike, matrix spike duplicate, matrix spike blank (LCS), and standard. Internal standard responses outside of established limits will adversely affect the quantitation and final concentration of target compounds.
- Matrix Spike (MS): An aliquot of a sample (water or soil) fortified (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for matrix interference by measuring recovery. The spiking occurs prior to sample preparation and analysis. Poor spike recovery may indicate a problem with the sample composition.
- Laboratory Control Sample (LCS): An aliquot of analyte-free reagent water or sand fortifed (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method efficiency.
- Blank: An artificial sample of analyte-free water or solvent, designed to monitor the introduction of contaminates into the analytical process.
- Method Dectection Limit (MDL): The minimum concentration of an analyte or compound that can be measured and reported with 99% confidence that the result concentration is greater than zero.

#### Petroleum Hydrocarbon Comments:

The following comments are specific to Diesel Range Organics (DRO), by GC/FID:

- Results for DRO are based on chromatographable portions of the petroleum product. The Carbon Range refers to the approximate chromatographic region covered by the specified petroleum product in straight-chain carbon units between C9-C36.
- Quantitation is based on the average response factors for a series of hydrocarbons standards. The sample result from the DRO fraction is independent of the target compound assignment.
- Samples yielding chromatographic patterns that do not agree with any of the method targets are reported as "unmatched".





## **AMPLE INFORMATION**

NH DES 253903-A

NYDOH 10843

Sample ID:	22464	8-1	_ Batch	n#		
atrix	Aqueous	Soil	Sediment	Other	<del>-</del> ,	
intalners	Satisfactory	Broken	Leaking:			
	Aqueous	□ N/A	(D) pH<2	☐ pH>2	Comment:	
	(acid Preserved)		7			
	-		7 -11-44	☐ pH>11	Comment:	
	Aqueous	□ N/A	☐ pH<11	☐ bu>!!	Comment.	
1 .	(TSP Preserved)	1	Complex NOT	preserved in Methan	ol or ole tight	g Soll/sediment
ample reservatives	Soil or	□ N/A container	☐ Samples NOT	breserved in Meman	or or an-ugrit	mL Methanol
6561 Valive5	Sediment		rec'd in Methanol:	covering soil/	sediment	1:1 +/-25%
		i= '	ng soil/sediment			
			ecelved in air-tight o	ontainer:		Other:
emperature	Received on Ice		at 4°C ± 2°C	U Other: 17.8	°C	Tun Other
mporataro	TE TROOTING				· · · · · · · · · · · · · · · · · · ·	
Sample ID	: <u>229498</u>	-2	Batch	n#		_
atrix	Aqueous	Soil	Sediment	Other		
ontainers	Satisfactory	Broken	Leaking:			
	Aqueous	□ N/A	pH<2	☐ pH>2	Comment:	
	(acid Preserved)		<i></i>	,		
	<del></del>	□ N/A	☐ pH<11	☐ pH>11	Comment:	
	Aqueous	∐ N/A	□ bu !</td <td>广 hu≤i;</td> <td>Comment.</td> <td></td>	广 hu≤i;	Comment.	
mala	(TSP Preserved)	N/A	C Samples NOT	preserved in Methan	ol or air-tight	g Soil/sediment/
ample reservatives	3011 01	container	Samples NOT	preserved in Median	or or an-light	mL Methanol
0001101100	Sediment		rec'd in Methanol:	covering soil/	sediment	1:1 +/-25%
			ng soil/sediment			
		☐ Samples r	eceived in air-tight c	ontainer:		Other:
emperature	Received on Ice		at 4°C ± 2°C	D-Other: (つ, 8	°C	
Sample ID	:	· <u></u> .	Batch	n#		
atrix	Aqueous	Soil	Sediment	Other		
ontainers	Satisfactory	Broken	Leaking:			
	Aqueous	□ N/A	□ pH<2	pH>2	Comment:	
	(acid Preserved)					
_	Aqueous	□ N/A	□ pH<11	☐ pH>11	Comment	7
	(ISP Preserved)				20	6
ample	Soil or	□ N/A	Samples NOT	preserved in Methan	ol ocaliftiant	g Soil/sediment/
reservatives		container	, mb	COV	1,00	mL Methanol
	Sediment		s rec'd in Methanet.	covering still	sediment	1:1 +/-25%
		ot coveri	ng soil/sediment			
		Samples r	ecolved in air-tight c	ontainer:		Other:
emperature	Received on Ice		1 4°C ± 2°C	Other:	°C	
<del></del>		<del>/                                    </del>				
	MADEP MA 014			STL Westfield	STL Billerica-Ser	vice Center
•	RIDOH57	NELAP FL E87912	тох	53 Southampton Rd.	148 Rangeway F	Rd.
EVERN CTT	CTDPH 0494	NELAP NJ MA008	TOX	Westfield, MA 01085	N. Billerica, MA (	
TRENT STI	VT DECWSD	NELAP NY 10843	ALL X.	Tel:(413)572-4000	Tel:(978)667-140	

Fax:(413)572-3707

fax:(978)667-7871

\*\*PLE INFORMATION

Sample	10: 20aug	8-3 Batch# 50478	
ix	Aqueous	Soil Sediment Other	
.!aincus	Satisfactory	Broken Leaking:	
	Aqueous (acid Preserved)	□ N/A pH<2 □ pH>2 Comment:	
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
nple pervatives	Soll or		g Soil/sediment mL Methanol
	Sedlment	Samples rec'd in Methanol: Covering soil/sediment not covering soil/sediment	1:1 +/-25%
		Samples received in air-tight container:	Other:
erf <b>e</b>	keceived on Ice	Received at 4°C ± 2°C  Other: 17. % °C	
Sample	ID:Aqueous	Batch#	
مان الله	Satisfactory	Broken Leaking:	
	Aqueous (acid Preserved)	□ N/A □ pH<2 □ pH>2 Comment:	
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
m <b>ple</b> mervatives	Soil or	☐ N/A ☐ Samples NOT preserved in Methanol or air-tight container	g Soil/sediment/ mL Methanol
	Sediment	☐ Samples rec'd in Methanol: ☐ covering soil/sediment ☐ not covering soil/sediment	1:1 +/-25%
		Samples received in air-tight container:	Other:
:erc:::re	Neceived on Ice	Received at 4°C ± 2°C Other: °C	····
Sample X	Aqueous Satisfactory	Batch#    Soil   Sediment   Quer     Broken   Leaking:	
	Aqueous (acid Preserved)	□ N/A □ pH<2 pH>2 Comment:	
	Aquenus (TSP Preserved)	□ N/A pH<11 □ pH>11 Comment:	
ole ervaticas	Soil or	Samples NOT preserved in Methanol or air-tight container	g Soil/sediment/ mL Methanol
	Sediment	☐ Samples rec'd in Methanol: ☐ covering soil/sediment ☐ not covering soil/sediment	1:1 +/-25%
		Samples received in air-tight container:	Other:
Carriera	☐ Keceived on Ice	Received at 4°C ± 2°C	
T ST	MADER MA 014 RIDDH"7 CTDCH 0494 VT DECWSD NH DES 263003.4	NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NYDOH 10843 NYDOH 10843 STL Westfield STL Billerica-Ser 148 Rangeway R Ne estfield, MA 01085 N. Billerica, MA 0 Tel:(413)572-4000 Tel:(978)667-140 NYDOH 10843 Tel:(413)572-3707 Tel:(473)572-3707 Tel:(473)572-3707 Tel:(473)572-3707	d. 1862 0

Fax:(413)572-3707

fax:(978)667-7871

NYDOH 10843

NH DES 253903-A

rpjsckl Job Sample Rece	pt Checklist Report V2
Job Number.: 229698 Location.: 57345 Check List Number.: 20002799 Project Description.: Laborate Customer: URS	t Date.: Date of the Report: 09/26/2005
Questions ? (Y/N) Cor	ments
Chain-of-Custody Present? Y	
If "yes", completed properly? Y	
Custody seal on shipping container? N	
If "yes", custody seal intact?	
Custody seals on sample containers? N	
If "yes", custody seal intact?	
Samples iced?	
Temperature of cooler acceptable? (4 deg C +/~ 2). N	
Temperature at receipt 29:	40 17.8 pc 9/30/05
Samples received intact (good condition)? Y	
Volatile samples acceptable? (no headspace) Y	
Is a Trip 8lank required?	
Was a Trip Blank provided?	
Correct containers used? Y	
Adequate sample volume provided? Y	
Samples preserved correctly? Y	
Samples received within holding-time? Y	
Agreement between COC and sample labels? Y	
Comments	. Pickup
If samples were shipped was there an air bill #?	
Sample Custodian Signature/Datejic	1 9/26/05
This is Page 1(A)	1/2

Chain of Custody Form

TRENT 5TL

(P) 413-572-4000 (F) 413-572-3707 N. Bill....... AA 0...... (P) 978-667-1400 (F) 978-667-7871

STL Westfield STL Billerica / Service Center

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STL Westfield 53 Southampton Road Westfield, MA 01085

Tel: 413 572 4000 Fax: 413 572 3707 www.stl-inc.com

George Giese URS 477 Congress St. 9th Floor Portland, ME 04101-3432

10/05/2005

Report Number: 229830 Raynham, MA

Dear George Giese,

The analysis of your sample(s) submitted on 09/27/2005 is now complete and the appropriate analytical report is enclosed. The samples were prepared and analyzed according to established methodologies and protocols. All holding times were met for the methods performed on these samples, unless otherwise noted in the report's case narrative.

If you have any questions regarding this report, please contact your Project Manager, Lisa A. Worthington.

For questions, concerns or comments regarding our service, please do not hesitate to contact me directly. Thank you for selecting STL Westfield, and we look forward to working with you on future projects.

Steven C. Hartmann Laboratory Director STL WESTFIELD

Technical Review: CFR 10/5/05

Total number of pages in this report:

	MADE	P MCP AI	nalytical Met	hod Repor	t Certific	ation Fo	orm		
Laboratory	Name:	Severn Tr	ent Laboratory	(STL) West	field Pro	oject #:	2298	30	
Project Loc	ation:	Raynham			MADEP	RTN <sup>1</sup> :			
This form p 229830-(1-		ations for the	following data set:	[list Laboratory	Sample ID Nu	ımber(s)]			
Sample Ma	atrices:	Groundwate	er Soil/Se	diment	Drinking Wat				
MCP SW- Methods		8260B( ) 8270C( )	8151A ( ) 8081A ( )	8330 ( ) VPH ( x )	6010B ( )	7470A/1A 9014M² (		Other (	)
ellitat .	d in MADEP	8082 ( )	8021B ( )	EPH()	7000 S <sup>3</sup> ( )	7196A (	)		
Compendion Analytical N (check all t	Methods.	2 M - SW-84	se Tracking Numb 46 Method 9014 or 6 Methods 7000 S	MADEP Physic	ologically Avai			Metho	d
An affi	rmative respo	nse to quest	ions A, B, C and I	) is required fo	or "Presumpt	ive Certain	ty" status	5	
A			by the laboratory in of-Custody docum				Yes	N	o <sup>1</sup>
В	included in thi	s report follow arrative QC da	s required for the seed, including the reat that did not me	equirement to n	ote and		Yes	N	o <sup>1</sup>
С	for "Presumpt the MADEP d	ive Certainty", ocument CAM	luded in this report as described in So I VII A, " Quality As cquisition and Rep	ection 2.0 (a), (b surance and Q	o), (c) and (d) uality	of	(es)	N/A	No <sup>1</sup>
D			ily: Was the VPH one Section 11.3 of r			thout	<b>(</b> (e)	N/A	No <sup>1</sup>
	A response	to question	s E and F below is	s required for '	'Presumptive	e Certainty	" status		
E	T	erformance s	tandards and reco				(es)	No <sup>1</sup>	
F	Were results method(s) rep	•	list compounds/ele	ements for the s	pecified		<b>(68)</b>	N/A	No <sup>1</sup>
1	All Negative re	sponses mus	t be addressed in a	n attached Env	ironmental La	boratory ca	se narrati	∕e.	-
inquiry of	those respon	sible for obta	pains and penaltic aining the informa Thowledge and l	ition, the mate	rial containe	d in this	sonal		·
	Signature:		Vriuste Squ	ynoble 1	Positio Dat	n: <u>Laborat</u> e: ເຕໄດ	ory Direc	tor	-
CAM VII A, Rev 3					<b>-</b>			April-04	
SEVER	N CTI	MADEP MAD14 NY DOH 10843 RI DOH 57 CT DPH 0494 VT DECWSD	NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NH DES 253901-A		STL Westfield 53 Southampton Ro Westfield, MA 0108: Tel:(413)572-4000 Fax:(413)572-3707	ı <b>.</b>	3ilierica Service 148 Rangewa N.Billerica, M Tel:(978)667-1 Fax:(978)667	y Rd A 01862 I 400	

Fax:(413)572-3707

Fax:(978)667-7871

VT DECWSD

# MCP CASE NARRATIVE

Client: URS

Report Number: 229830

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy regulatory monitoring limits in some cases if the "adjusted" RL is greater that the applicable regulatory standards or criterion to which the concentration is being compared. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes, which exceed the calibration range.

Calculations are performed before rounding to avoid round-off errors in calculated results. All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The project samples were received on 09/27/05; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler upon receipt at the laboratory was 15.0°C.

\* Note: All samples which require thermal preservation are considered acceptable by STL Westfield if the arrival temperature is within ±2°C of the required temperature. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

It is a recognized common industry practice that a sample transported to and received at a laboratory, packed on ice (or blue ice), has maintained its thermal preservation integrity during transfer. It can be argued, with constant warming of the cooler, the samples were maintained at proper temperature for a majority of time spent in transportation. Based on this and the fact that the samples were packed with ice, it is the laboratory's opinion these samples were not compromised.

## **MADEP VPH**

All QA/QC procedures required for the specified analytical method were performed as per section B of the MADEP MCP analytical method report Certification form.

All QC performance standards and recommendations for this specific method were achieved.







## SAMPLE INFORMATION

Date: 10/05/2005

Job Number.: 229830 Customer...: URS

Attn....: George Giese

Project Number...... 20002799
Customer Project ID...: RAYNHAM

Project Description....: Laboratory Analysis-Massachusetts

Laboratory Sample 10	Customer Sample ID		Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229830-1	Midpoint 1#	1	Water	09/27/2005	11:50	09/27/2005	16:40
229830-2	Effluent		Water	09/27/2005	13:25	09/27/2005	16:40
229830-3	Influent	,	Water	09/27/2005	15:10	09/27/2005	16:40
				:			
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			,				
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Job Number: 229830

Date: 10/05/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Midpoint 1# Date Sampled.....: 09/27/2005 Time Sampled....: 11:50 Sample Matrix....: Water

Laboratory Sample ID: 229830-1 Date Received.....: 09/27/2005

4 887.5

Time Received.....: 16:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	G	REPORTING LIMIT	UNITS	DATE	TECH
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND 99 ND ND 99 ND	ם ממ טמממממ	5.0 10 5.0 5.0 5.0 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05	cdt cdt cdt cdt cdt cdt cdt cdt cdt



Page 2

STL Westfield 53 Southampton Rd. Westfield, MA 01085 Tel: (413) 572-4000 Fax: (413) 572-3707

Job Number: 229830

Date: 10/05/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Customer Sample ID: Effluent
Date Sampled.....: 09/27/2005
Time Sampled.....: 13:25
Sample Matrix....: Water

Laboratory Sample ID: 229830-2 Date Received.....: 09/27/2005

Time Received.....: 16:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNÎTS	DATE	TECH
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND ND ND ND ND ND ND	טבטבטבטבטטטטטט	5.0 5.0 5.0 10 5.0 5.0 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05 09/29/05	cdt cdt cdt cdt cdt cdt cdt cdt cdt
					-		

In Description = Dry Wgt.





PROJECT: RAYNHAM

Job Number: 229830

Date: 10/05/2005

CUSTOMER: URS

Customer Sample ID: Influent
Date Sampled.....: 09/27/2005
Time Sampled.....: 15:10
Sample Matrix....: Water

ATTN: George Glese

Laboratory Sample ID: 229830-3
Date Received.....: 09/27/2005
Time Received.....: 16:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
ADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND ND ND ND ND 6.3 190 98 ND 190 96 280	99999	5.0 5.0 10 5.0 5.0 5.0 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	09/30/05 09/30/05 09/30/05 09/30/05 09/30/05 09/30/05 09/30/05 09/30/05 09/30/05 09/30/05	cdt cdt cdt cdt cdt cdt cdt cdt

LABORATORY CHRONICLE

Job Number: 229830

Date: 10/05/2005

CUSTOMER: URS		PROJECT: RAYNHAM	ATTN: George Glese	
Lab ID: 229830-1	Client ID: Midpoint 1#	Date Recvd: 09/27/2005	Sample Date: 09/27/2005	DILUTION
METHOD	DESCRIPTION	RUN# BATCH# PREP BY	#(S) DATE/TIME ANALYZED	
MADEP VPH	Volatile Organics	1 50543	09/29/2005 1548	
Lab ID: 229830-2	Client ID: Effluent	Date Recvd: 09/27/2005	Sample Date: 09/27/2005	DILUTION
METHOD	DESCRIPTION	RUN# BATCH# PREP BT	#(S) DATE/TIME ANALYZED	
MADEP VPH	Volatile Organics	1 50543	09/29/2005 1625	
Lab ID: 229830-3 METHOD MADEP VPH	Client ID: Influent DESCRIPTION Volatile Organics	Date Recvd: 09/27/2005 RUN# BATCH# PREP BT 1 50543		DILUTION



# SURROGATE RECOVERIES REPORT

Job Number .: 229830

Report Date.: 10/05/2005

CUSTOMER: URS				PROJECT: RA	NAHAY		. ,	ATTN: George Glese
	Method: Volatile Organics Batch(s): 50543				d Code Matrix	.: VPH .: Water	Prep Batch: Equipment Code:	
Lab ID		DT	Sample ID		Date	250BTP	250BTS	
CD CS IB 129830- 129830- 129830-	1 2 3	_	Midpoint 1# Effluent Influent		09/29/2005 09/29/2005 09/29/2005 09/29/2005 09/29/2005 09/30/2005	88.1 88.3 83.3 80.5 78.3 83.1	84.3 82.3 79.6 85.3 84.3 83.4	
Test	Tes	t Des	cription	Limits				
SDBTP	•		omotoluene (surr-PID)	70.0 - 130 70.0 - 130				



QUALITY CONTROL RESULTS

Job Number.: 229830

Report Date.: 10/05/2005

CUSTOMER: URS PROJECT: RAYNHAM ATTN: George Giese

QC Type Description Reag. Code Lab ID Dilution Factor Date Time

Test Method.....: MADEP VPH

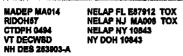
Method Description.: Volatile Organics Batch...... 50543

Analyst...: cdt

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LCD	Laboratory Control Sam	ole Duplicat	E05	ESPK001				09/29/2005 1401
	ter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value	e QC Calc	. * Limits
enzene (C5-C8	3)	ug/L	106.712	106.500	100.000	5.000	U 106.7 0.2	70.0-130.0 25.0
thylbenzene (	C9-C12)	ug/L	108.696	109.336	100.000	5.000	U 108.7 0.6	70.0-130.0 25.0
ethyl-t-butyl	ether (C5-C8)	ug/L	105.546	97.799	100.000	5.000	บ 105.5 7.6	70.0-130.0 25.0
aph tha lene		ug/L	107.041	105.515	100.000	10.000	U 107.0 1.4	70.0-130.0 25.0
oluene (C5-C8	3)	ug/L	107.374	106.138	100.000	5.000	U 107.4 1.2	70.0-130.0 25.0
&p-Xylenes		ug/L	218.696	221.564	200.000	5.000	U 109.3 1.3	70.0-130.0 25.0
-Xylene		ug/L	109.205	110.063	100.000	5.000	บ 109.2 0.8	70.0-130.0 25.0
9-C10 Aromati	cs	ug/L	320.372	322.948	300.000	50.000	U 106.8 0.8	70.0-130.0 25.0
nadjusted C5-	C8 Aliphatics	ug/L	647.760	651.072	600.000	50.000	U 108.0 0.5	70.0-130.0 25.0
nadjusted C9-	C12 Aliphatics	ug/L	888.632	892.114	800.000	50.000	U 111.1 0.4	70.0-130.0 25.0





\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Report Date.: 10/05/2005

PROJECT: RAYNHAM ATTN: George Giese

ion Reag. Code Lab ID Dilution Factor Date Time

Test Method.....: MADEP VPH
Method Description: Volatile Organics
Batch.....: 50543

LCS Laboratory Control Sam		ple	E05ESPK001			1.00	09/29/2005 1325
Pa	rameter/Test Description	Units	QC Result	QC Result	True Value	Orig. Value QC C	alc. * Limits
Jenzene (C	:5-c8)	ug/L	106.500		100.000	5.000 U 106.	
	ne (C9-C12)	ug/l	109.336 97.799		100.000 100.000	5.000 U 109.3 5.000 U 97.8	3 70-130 70-130
laphthalen	outyl ether (C5-C8) Ne	ug/L ug/L	105.515		100.000	10.000 U 105.	70-130
ioluene (C		ug/L	106.138	*	100.000 200.000	5.000 U 106. 5.000 U 110.	
n&p-Xylene >-Xylene	es ·	ug/L ug/L	221.564 110.063		100.000	5.000 U 110.	7 111
:9-C10 Aro	matics	ug/L	322.948		300.000	50.000 U 107.	
	1 C5-C8 Aliphatics 1 C9-C12 Aliphatics	ug/L ug/L	651.072 892.114		600.000 800.000	50,000 U 108.5 50.000 U 111.5	

Job Number.: 229830

Description

CUSTOMER: URS

QC Type



\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Test Method: MADEP VPH Method Description:: Volatile Organics		Batch: 50543			Analyst: cdt			
QC Type		Description		Reag. Code	Lab ID	Dilution Factor	Date	Tim
CUSTOMER: UR	!S		PROJE	CT: RAYNHAM		ATTN: George Giese		
	Job Number.:	229830	QUALITY	CONTROL	RESULTS	Report Date.: 10/0	5/2005	

МВ	MB Method Blank		2000						0	9/29/	<sup>2005</sup> 151	3
Pa	rameter/Test Description	Units	QC Result		QC Result	True Value	e Orig.	Value	QC Calc.	*	Limits	F
enzene (C	5-08)	ug/L	5.000									
thylbenze	ne (C9-C12)	ug/L	5.000	U								
Methyl-t-b	utyl ether (C5-C8)	ug/L	5.000	U								
Naphthalen	le	ug/L	10.000	U								
oluene (C	5-C8)	ug/L	5.000	U								
&p-Xylene	s	ug/L	5.000									
⊸-Xylene		ug/L	5.000									
Xylene (to	tal) (C9-C12)	ug/L	5.000	Ų								
r5-c8 Alip	hatics	ug/L	50.000	U								
9-C10 Aro	matics	ug/L	50.000	U								
9-C12 Ali	phatics	ug/L	50,000	U								
Unadjusted	C5-C8 Aliphatics	ug/L	50.000	U								
Unadjusted	C9-C12 Aliphatics	ug/L	50.000	U								
PH Concen	tration (Total)	ug/L	50.000	U								



## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 10/05/2005

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4

## LABORATORY CERTIFICATIONS:

MADEP MA014, NY NELAC 10843, NJ NELAC MA008 (TOX), FL NELAC E87912 (TOX), CT DPH 0494, NY DOH 10843, NH DES 253901-A, VT DECWSD, RI DOH 57.

#### LOCATION:

STL Westfield: 53 Southampton Rd, Westfield, MA 01085. Phone: (413) 572-4000 Fax: (413) 572-3707

STL Service Center: 148 Rangeway Rd. N. Billerica, MA 01862. Phone: (978) 667-1400 Fax: (978) 667-7871

#### DATA REPORTING QUALIFIERS AND TERMINOLOGY:

A number of data qualifiers are widely used within the environmental testing industry and may be utilized in our data reports. The majority of the qualifiers have evolved from the EPA Contract Laboratory Program (CLP).

#### REPORT COMMENTS:

All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Soil, sediment and sludge sample results are reported on a "dry weight" basis.

Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert.ID# 10843.

According to 40CFR Part 136.3, pH, Total Residual Chlorine and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field analyses, they were not analyzed immediately, but as soon as possible on laboratory receipt.

Analytical result(s) reported as "ND" and/or "U", indicates the analyte was analyzed for but "Not Detected." Analytical result(s) reported as "TNTC" indicates that the microbiological test was "Too Numerous To Count."

## GLOSSARY OF QUALIFIERS:

## Inorganic Qualifiers (Q-column):

U Indicates that the analyte was analyzed for but not detected.

- E Indicates an estimated value due to the presence of interference. When applied to GFAA analysis, indicates the one-point method of addition recovered between 40-85 percent.
- B Indicates an estimated result value. The result was measured between the reporting limit and the method detection limit (MDL).
- H Indicates the compound/element was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination.

## Organic Qualifiers (Q-column):

U Indicates that the compound was analyzed for but not detected.

- J Indicates an estimated result value. This qualifier is used when mass spectral data indicated the presence of a compound that meets the identification criteria and the result is less than the specified quantitation limit, but greater than the method detection limit (MDL).
- B Indicates that the compound was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination and warns the data user to exercise caution when applying the results to this compound.
- D Indicates all compounds identified in an analysis at a secondary dilution factor.
- E Indicates that the compound in an analysis has exceeded the instrument linear calibration range.





## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 10/05/2005

#### GLOSSARY OF TERMS:

- Surrogates (Surrogate Standards): An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but are not normally found in environmental samples. For semi-volatiles and pesticides/Arochlors, surrogate compounds are added to every blank, sample, matrix spike, matrix spiked duplicate, matrix spike blank (LCS), and standard. These compounds are used to evaluate analytical efficiency by measuring recovery. Poor surrogate recovery may indicate a problem with the sample composition.
- Internal Standard: An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process. For GC/MS semi-volatiles and volatiles, internal standards are added to every blank, sample, matrix spike, matrix spike duplicate, matrix spike blank (LCS), and standard. Internal standard responses outside of established limits will adversely affect the quantitation and final concentration of target compounds.
- Matrix Spike (MS): An aliquot of a sample (water or soil) fortified (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for matrix interference by measuring recovery. The spiking occurs prior to sample preparation and analysis. Poor spike recovery may indicate a problem with the sample composition.
- Laboratory Control Sample (LCS): An aliquot of analyte-free reagent water or sand fortifed (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method efficiency.
- Blank: An artificial sample of analyte-free water or solvent, designed to monitor the introduction of contaminates into the analytical process.
- Method Dectection Limit (MDL): The minimum concentration of an analyte or compound that can be measured and reported with 99% confidence that the result concentration is greater than zero.

### Petroleum Hydrocarbon Comments:

- The following comments are specific to Diesel Range Organics (DRO), by GC/FID:
- Results for DRO are based on chromatographable portions of the petroleum product. The Carbon Range refers to the approximate chromatographic region covered by the specified petroleum product in straight-chain carbon units between C9-C36.
- Quantitation is based on the average response factors for a series of hydrocarbons standards. The sample result from the DRD fraction is independent of the target compound assignment.
- Samples yielding chromatographic patterns that do not agree with any of the method targets are reported as "unmatched".







STL Westfield 53 Southampton Rd. Westfield, MA 01085 Tel: (413) 572-4000 Fax: (413) 572-3707

STL Billerica-Service Center 148 Rangeway Rd. N. Billerica, MA 01852 Tel: (978) 667-1400 Fax: (978) 667-7871

## VPH SAMPLE INFURMATION DATA

MP	F	INC	OP.	МΔ	TI	$\cup$
	ᇆ	шаг	w	пи		LJI

Sample	ID: 229830	-1 Batch# 50543	
itrix	Aqueous	Soil Sediment Other	
ntainers	Satisfactory	Broken Leaking:	
	Aqueous	□ N/A  pH<2 □ pH>2 Comment:	
	(acid Preserved)	HIA DE PITE COMMISSION.	
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
imple	Soil or	N/A Samples NOT preserved in Methanol or air-tight	g Soil/sediment
eservatives	Cadimana	container  Samples rec'd in Methanol: covering soil/sediment	mL Methanol
	Sediment		1:1 +/-25%
	j	not covering soil/sediment	~ <u> </u>
		Samples received in air-tight container:	Other:
mperature	PReceived on Ice	☐ Received at 4°C ± 2°C ☐ Other: [ 5 · △ °C	
Sample	ID: 229830-	Batch# 50543	
atrix	☑ Aqueous	Soil Sediment Other	
ontainers	Satisfactory	☐ Broken ☐ Leaking:	
	Aqueous	□ N/A ☑ pH<2 □ pH>2 Comment:	
	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)	profit Comment	
ımple	Soil or	N/A Samples NOT preserved in Methanol or air-tight	g Soil/sediment/
eservatives	00,101	Container	mL Methanol
	Sediment	Samples rec'd in Methanol: Covering soil/sediment	1:1 +/-25%
		not covering soil/sediment	
		☐ Samples received in air-tight container:	Other:
mperature	Received on Ice		
	old: <u>239</u> 130		
atrix	Aqueous	Soil Sediment Other	
ontainers	Satisfactory	Broken Leaking:	
	Aqueous	☐ N/A ☐ pH<2 ☐ pH>2 Comment:	
	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
ample	Soil or	☐ N/A ☐ Samples NOT preserved in Methanol or air-tight	g Soil/sediment/
eservatives		container	mL Methanol
	Sediment	Samples rec'd in Methanol: Covering soil/sediment	1:1 +/-25%
		not covering soil/sediment	
		☐ Samples received in air-tight container:	☐ Other:
mperature	Received on Ice		



MADEP MA 014 RIDOH57 CTDPH 0494 VT DECWSD NH DES 253903-A

NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NYDOH 10843



STL Westfield 53 Southampton Rd. Westfield, MA 01085 Tel:(413)572-4000 Fax:(413)572-3707 STL Billerica-Service Center 148 Rangeway Rd. N. Billerica, MA 01862 Tel:(978)667-1400 fax:(978)667-7871

rpjsckl	Job Sample Receipt Checklist Report	V2
Job Number.: 229830 Location.:  Sustomer Job ID:  Project Number.: 20002799 Project Customer: URS	: 57345 Check List Number.: 1 Description.: Job Check List Date.: ct Description.: Laboratory Analysis-Massachusetts Contact.: George Giese	Date of the Report: 09/29/2005 Project Manager: law
Ruestions ?	(Y/N) Comments	
Chain-of-Custody Present?	Y	
If "yes", completed properly?	Y	
Custody seal on shipping container	r? N	
If "yes", custody seal intact?.		
Custody seals on sample containers	s? N	
If "yes", custody seal intact?.		
Samples iced?		
emperature of cooler acceptable?	(4 deg C +/- 2). N	
Temperature at receipt	15.0c	
samples received intact (good cond	dition)? Y	
√olatile samples acceptable? (no h	neadspace)	
's a Trip Blank required?		
las a Trip Blank provided?		
Correct containers used?	Y	
dequate sample volume provided?	Y	
Samples preserved correctly?	Y	
amples received within holding-ti	íme? Y	
Agreement between COC and sample l	labels?Y	
comments		
if samples were shipped was there	an air bill #? Drop off Billierca	/ / /
Sample Custodian Signature/Date	bcm 09/29/05	my 9/29/65
his is Page 1(A)		

		musciului los, illo.
Chain of	Custody	/ Form



Westfield, MA 01085 (P) 413-572-4000 (F) 413-572-3707

N. Billerica, MA 01862 (P) 978-667-1400 (F) 978-667-7871

STL Weetfield STL Billerica / Service Cente

STL-8245 (1000)

Quote# Client: 04004 Shaded areas for office use Address **Project Manager** Comments **Analysis Requested** (Special Instructions) Check analysis and specify method and analytes in comments section. Phone: (03-813-106) Fax: Contact: For example: Please print legibility. If the analytical Requested Turnaround Time (PLEASE SPECIFY) Regulatory Classification 500-series for drinking water Special Report Format requests are not clearly defined on the 600-series for waste water, NPDES **NPDES Drinking Water** QA/QC Report chain-of-custody, the turnaround time 6000-series for groundwater, soil, waste STANDARD RUSH RCRA MCP GW1/S1 -DQE (MCP) Rpt 8000-series for groundwater, soil, waste will begin after all questions have been (Lab Approval Required) Other DEP Form(s) Use comments section to further define. satisfactorily answered. Sample Type Codes Preservative /602 /8021 WW-Wastewater DW-Drinking water SW-Surface water **1**00 LW-Lab water **GW-Groundwater** A-Air Plastic(P) or Glass(G) S-Solid / Soil SL-Sludge O-Oil Z-Other Date Time 12SO4 to pH Containers 표 -ICI to pH <2 'olatiles 601 Sampler's Initials Collected Sample ID 9-27-05 1150 927-05 Gu 8.8% Wite ST WISTFIE Sampled by (print): Signature: MADEP Requirement BobHorH Cooler ? Y / N Samples Iced? Y / N Relinquished by Date: Time: Temp @ receipt: Relinquished by Date Preservation / pH checked? Time: WESTFIELD White = Lab file Yellow = Report copy Pink = Customer copy



STL Westfield 53 Southampton Road Westfield, MA 01085

Tel: 413 572 4000 Fax: 413 572 3707 www.stl-inc.com

George Giese URS 477 Congress St. 9th Floor Portland, ME 04101-3432

10/12/2005

Report Number: 230001 RAYNHAM, MA

Dear George Giese,

The analysis of your sample(s) submitted on 10/04/2005 is now complete and the appropriate analytical report is enclosed. The samples were prepared and analyzed according to established methodologies and protocols. All holding times were met for the methods performed on these samples, unless otherwise noted in the report's case narrative.

If you have any questions regarding this report, please contact your Project Manager, Lisa A. Worthington.

For questions, concerns or comments regarding our service, please do not hesitate to contact me directly. Thank you for selecting STL Westfield, and we look forward to working with you on future projects.

Steven C. Hartmann Laboratory Director STL WESTFIELD

Technical Review: 10.12.05

Total number of pages in this report: 17

	MADE	P MCP An	alytical Met	hod Repo	rt Certifica	tion Fo	rm	
aboratory	Name:	Severn Tre	nt Laborator	y (STL) West	<b>ifield</b> Proj	ect #:	2300	01
Project Loc	ation:	Raynham, N	1A		MADEP F	RTN <sup>1</sup> :		
	rovides certific	cations for the f	ollowing data set	[list Laboratory	Sample ID Nun	nber(s)]		
Sample Ma	trices:	Groundwater	Soil/Se	diment	Drinking Water	r Othe	r:	
ICP SW-	846	8260B( )	8151A()	8330 ( )	6010B()	7470A/1A (		ther ( )
<b>Nethods</b>	<b>Jeed</b>	8270C( )	8081A ( )	VPH(x)	6020 ( )	9014M² (		
	d'In MADER	8082 ( )	8021B ( )	EPH()	7000 S³( )	7196A ( )		· ·
compendiu vialVilcal N check all:U	felhoda.	2 M - SW-84	e Tracking Numb 6 Method 9014 o 6 Methods 7000 \$	MADEP Physic	ologically Availa	ible Cyanido nd analyte.	e (PAC) N	fethod
An affir	rmative respo	nse to questic	ons A, B, C and	D is required fo	or "Presumptiv	e Certaint	y" status	
Α	Were all sam that described	ples received by I on the Chain-	y the laboratory in of-Custody docur	n a condition con nentation for the	nsistent with a data set?		(Yes)	No¹
В	included in th	is report followe arrative QC da	required for the sed, including the retailed that did not me	equirement to n	ote and	·	(Yēs)	No <sup>1</sup>
С	for "Presump the MADEP of	tive Certainty", a	uded in this repor as described in S VII A, " Quality A equisition and Re	ection 2.0 (a), ( ssurance and C	b), (c) and (d) o uality	f	ŒS)	N/A No <sup>1</sup>
D	VPH and EPI significant mo	d methods only diffications (see	y: Was the VPH Section 11.3 of	or EPH Method respective Meth	conducted with ods)?	out	(Tes)	N/A No
	A respons	e to questions	E and F below i	s required for	"Presumptive	Certainty"	status	
E	Were all QC		andards and reco					No <sup>1</sup>
F	Were results method(s) re	•	st compounds/el	ements for the s	specified		(PES)	N/A No
1	All Negative re	esponses must	be addressed in	an attached Env	/ironmental Lab	oratory cas	e narrativ	e.
inquiry of	those respon	sible for obtai	ains and penalti ning the inform knowledge and	ation, the mate	rial contained	in this	onal	
	Signature:	th	Huth			: <u>Laborato</u>	ry Direct	or
   CAM VII A, Rev 3		: Steven C. H	artmann		_ Date:			S April-04
O-101 VII A, 100 3	·· <u>-</u>	MADED MARA	MEI AD EL ESTAAS TOV		STL Westfield	ģī pi	lierica Service	
SEVERI		MADEP MA014 NY DOH 10843 RI DOH 57 CT DPH 0494	NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NH DES 253901-A	and the Maconorus	53 Southampton Rd, Westfield, MA 01085 Tel:(413)572-4000		148 Rangeway N.Billerica, MA Tel:(978)867-14	Rd 01862
		VT DECWSD		<b>nal</b> a <b>o</b>	Fax:(413)572-3707		Fax:(978)667-7	

## MCP CASE NARRATIVE

Client: URS

Report Number: 230001

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues as stipulated in the MCP reporting requirements.

In order to facilitate report review, a separate MCP Analytical Method Report Certification Form is included for each method requested.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy "MCP program" reporting limits in some cases if the "adjusted" RL is greater that the applicable MCP standards or criterion to which the concentration is being compared. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes, which exceed the calibration range.

Calculations are performed before rounding to avoid round-off errors in calculated results. All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The project samples were received on 10/04/05; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers upon receipt at the laboratory was 5.0°C.

## **MADEP VPH**

All QA/QC procedures required for the specified analytical method were performed as per section B of the MADEP MCP analytical method report Certification form.

All QC performance standards and recommendations for this specific method were achieved.







SAMPLE INFORMATION

Date: 10/12/2005

Job Number.: 230001 Customer...: URS Attn....: George Giese Project Number.....: 20002799

Customer Project ID....: RAYNHAM

Project Description...: Laboratory Analysis-Massachusetts

18.38

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
230001-1	Influent	Water	10/04/2005	09:32	10/04/2005	18:20
230001-2	Effluent	Water	10/04/2005	09:35	10/04/2005	18:20
230001-3	Midpoint-1	Water	10/04/2005	10:40	10/04/2005	18:20
	:					
			,			
			1			



Job Number: 230001

Date: 10/12/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Glese

Customer Sample ID: Influent
Date Sampled....: 10/04/2005
Time Sampled....: 09:32
Sample Matrix....: Water

Laboratory Sample ID: 230001-1 Date Received.....: 10/04/2005

Time Received.....: 18:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TECI
MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics VPH Concentration (Total)	12 6.4 ND 110 33 120 69 250 1800 ND 290 1200 2000	U	5.0 5.0 5.0 5.0 5.0 5.0 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05	cdt cdt cdt cdt cdt cdt cdt cdt

' In Description = Dry Wgt.





Job Number: 230001

Date: 10/12/2005

CUSTOMER: URS PROJECT: RAYNHAM

ATTN: George Glese

Customer Sample ID: Effluent
Date Sampled....: 10/04/2005
Time Sampled....: 09:35
Sample Matrix...: Water

Laboratory Sample ID: 230001-2 Date Received.....: 10/04/2005 Time Received.....: 18:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TEC
ADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND 340 ND 74 200 410	טטטטטטטט	5.0 5.0 10 5.0 5.0 5.0 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05	cdt cdt cdt cdt cdt cdt cdt cdt

Militara 5.

Job Number: 230001

Date: 10/12/2005

CUSTOMER: URS

PROJECT: RAYNHAM

. AITN: George Glese

Customer Sample ID: Midpoint-1
Date Sampled....: 10/04/2005
Time Sampled....: 10:40
Sample Matrix...: Water

Laboratory Sample ID: 230001-3
Date Received.....: 10/04/2005

Time Received.....: 18:20

	TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	REPORTING LIMIT	UNITS	DATE	TECH	l
	MADEP VPH	Volatile Organics Benzene (C5-C8) Ethylbenzene (C9-C12) Methyl-t-butyl ether (C5-C8) Naphthalene Toluene (C5-C8) m&p-Xylenes o-Xylene C5-C8 Aliphatics C9-C10 Aromatics C9-C12 Aliphatics Unadjusted C5-C8 Aliphatics Unadjusted C9-C12 Aliphatics VPH Concentration (Total)	ND ND ND ND ND ND ND ND ND ND ND ND ND N	כ בכככככ	5.0 5.0 5.0 5.0 5.0 50 50 50 50 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05 10/07/05	cdt cdt cdt cdt cdt cdt cdt cdt cdt cdt	
	·								
1									

LABORATORY CHRONICLE

Job Number: 230001

DESCRIPTION

Date: 10/12/2005

CUSTOMER: URS

Lab ID: 230001-1 METHOD

MADEP VPH

Lab ID: 230001-2 METHOD

MADEP VPH

Lab ID: 230001-3 METHOD MADEP VPH

Client ID: Effluent DESCRIPTION

Client ID: Influent

Volatile Organics Client ID: Midpoint-1

Volatile Organics

DESCRIPTION **Volatile Organics**  PROJECT: RAYNHAM

Date Recyd: 10/04/2005

51008

RUN# BATCH# PREP BT #(S) 51008

RUN# BATCH# PREP BT #(\$)

Sample Date: 10/04/2005 DATE/TIME ANALYZED

10/07/2005 0809

Date Recvd: 10/04/2005 Sample Date: 10/04/2005

ATTN: George Giese

DATE/TIME ANALYZED DILUTION 10/07/2005 0657

DILUTION

Date Recvd: 10/04/2005 Sample Date: 10/04/2005

RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED DILUTION 51008 10/07/2005 0733

## SURROGATE RECOVERIES REPORT

Job Number,: 230001

\*

Report Date.: 10/12/2005

CUSTOMER: URS

PROJECT: RAYNHAM

ATTN: George Giese

Method: Volatile Organics Batch(s): 51008				Metho Test	Prep Batch: Equipment Code:			
Lab ID		DT	Sample ID		Date	25DBTP	25DBTS	
.CD		-			10/06/2005	86.3	95.5	
.cs					10/06/2005	83.1	93.6	
1B					10/06/2005	81.5	94.2	
230001- 1			Influent		10/07/2005	79.2	79.0	
230001- 2	<u>:</u>		Effluent		10/07/2005	81:8	88.8	
230001- 3	i		Midpoint-1		10/07/2005	80.8	87.5	
Test	Tes	t Desc	cription	Limits				
25DBTP			omotoluene (surr-PID)	70.0 - 130	=			
SDBTS	2,5	-Dibro	omotoluene (surr-FID)	70.0 - 130	•			



	Job Number.: 230001	QUALITY	CONTROL	RESULTS	Report Date.: 10/12/2005						
CUSTOMER: URS		PROJEC	CT: RAYNHAM	. 1.478	ATTN: George Giese						
QC Type	Description	n	Reag. Code	Lab ID	Dilution factor	Date	Time				

Analyst...: cdt Test Method.....: MADEP VPH
Method Description:: Volatile Organics Betch..... 51008

rco	iaboratory Control Samp		Laboratory Control Sample Duplicate		£05ESPK001			10/06/2005					
Parameter/Test Description Units		Units	QC Result	QC Result	True Value	Orig. Valu	e QC Calc.	* Limits F					
Benzene (C5-C8)		ug/L	96.106	98.484	100.000	5.000	U 96.1 2.4	70.0-130.0 25.0					
Ethylbenzene (C9-C12)		ug/L	97.839	99.161	100.000	5.000	U 97.8 1.3	70.0-130.0 25.0					
Methyl-t-butyl ether (C5-C8)		ug/L	77.830	77.777	100.000	5.000 u 77.8 0.1		70.0-130.0 25.0					
Naphthalene		ug/L	98.593	94.674	100.000	10.000	U 98.6 4.1	70.0-130.0 25.0					
Toluene (C5-C8)		ug/L	97.632	100.733	100.000	5.000	U 97.6 3.1	70.0-130.0 25.0					
m&p-Xylenes		ug/L	199.860	200.434	200.000	5.000	U 99.9 0.3	70.0-130.0 25.0					
o-Xyl ene		ug/L	99.678	101.737	100.000	5.000	U 99.7 2.0	70.0-130.0 25.0					
C9-C10 Aromatics		ug/L	286.654	289,939	300.000	50.000	U 95.6 1.1	70.0-130.0 25.0					
Unadjusted C5-C8 Aliphatics		ug/L	639.288	651.441	600.000	50.000	U 106.5 1.9	70.0-130.0 25.0					
Unadjusted C9-C12 Aliphatics		ug/L	856.701	869.273	800.000	50.000	U 107.1 1.5	70.0-130.0 25.0					

QUALITY CONTROL RESULTS

Job Number .: 230001

Report Date.: 10/12/2005

Time

CUSTOMER: URS ATTN: George Giese PROJECT: RAYNHAM

QC Type Description Reag. Code Lab ID Dilution Factor Date

Test Method.....: MADEP VPH Analyst...: cdt Method Description.: Volatile Organics Batch..... 51008

LCS	Laboratory Control Sam	ple	e E05ESPK001				10/06/2005 1928				
Parameter/Test Description		/Test Description Units		QC Result	True Value	Orig. Value QC Calc.	. * Limits !				
Benzene ((	C5-C8)	ug/L	98.484		100.000	5.000 U 98.5	70-130				
Ethylbenzene (C9-C12)		ug/L	99.161		100.000	5.000 U 99.2	70-130				
Methyl-t-butyl ether (C5-C8)		ug/L	77.777		100.000	5.000 U 77.8	70-130				
Naphthalene		ug/L	94.674		100.000	10.000 U 94.7	70-130				
Toluene (C5-C8)		ug/L	100.733		100.000	5.000 U 100.7	70-130				
m&p-Xylenes		ug/L	200.434		200.000	5.000 U 100.2	70-130				
.o~Xylene		ug/L	101.737		100.000	5.000 U 101.7	70-130				
C9-C10 Aromatics		ug/L	289.939		300.000	50.000 U 96.6	70-130				
Unadjusted C5-C8 Aliphatics		ug/L	651.441		600.000	50.000 U 108.6	70-130				
	1 C9-C12 Aliphatics	ug/L	869.273		800.000	50.000 U 108.7	70-130				

MADEP MA014 RIDOH57 CTDPH 0494 VT DECWSD NH DES 253903-A



	Job Number.: 230001	QUALITY	CONTROL	RESULTS	Report Date.: 10/1	2/2005	
CUSTOMER: UF	RS	PROJECT	. DAVNUAM		ATTN: George Giese		
QC Type	Descript	ion	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: MADEP VPH
Method Description:: Volatile Organics Analyst...: cdt Batch..... 51008

MB Method Stank										11	10/06/2005 2230			
Parameter/Test Description	Units	QC Result		QC Result	True	Value	Orig.	Value	QC	Calc.	*	Limits	F	
Benzene (C5-C8)	ug/L	5.000	U						_			<del> </del>		
Ethylbenzene (C9-C12)	ug/L	5.000	U											
Methyl-t-butyl ether (C5-C8)	ug/L	5.000	U											
laphthalene	ug/L	10.000	U											
Toluene (C5-C8)	ug/L	5.000	U											
n&p-Xylenes	ug/L	5.000	U											
o-Xyléne	ug/L	5.000	U											
(ylene (total) (C9-C12)	ug/L	5.000	U											
C5-C8 Aliphatics	ug/L	50.000	U											
C9-C10 Aromatics	ug/L	50,000	U											
C9-C12 Aliphatics	ug/L	50.000	U											
Unadjusted C5-C8 Aliphatics	ug/L	50.000	U											
Unadjusted C9-C12 Aliphatics	ug/L	50.000	U											
VPH Concentration (Total)	ug/L	50,000	U											



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2 1

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## QUALITY ASSURANCE METHODS

#### REFERENCES AND NOTES

Report Date: 10/12/2005

STL WESTFIELD is part of Severn Trent Laboratories, Inc. Visit us at www.stl-inc.com.

#### LABORATORY CERTIFICATIONS:

MADEP MA014, NY NELAC 10843, NJ NELAC MA008 (TOX), FL NELAC E87912 (TOX), CT DPH 0494, NY DOH 10843, NH DES 253901-A, VT DECWSD, RI DOH 57.

#### LOCATION:

STL Westfield: 53 Southampton Rd, Westfield, MA 01085. Phone: (413) 572-4000 Fax: (413) 572-3707

STL Service Center: 148 Rangeway Rd. N. Billerica, MA 01862. Phone: (978) 667-1400 Fax: (978) 667-7871

#### DATA REPORTING QUALIFIERS AND TERMINOLOGY:

A number of data qualifiers are widely used within the environmental testing industry and may be utilized in our data reports. The majority of the qualifiers have evolved from the EPA Contract Laboratory Program (CLP).

#### REPORT COMMENTS:

All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Soil, sediment and sludge sample results are reported on a "dry weight" basis.

Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert.ID# 10843.

According to 40CFR Part 136.3, pH, Total Residual Chlorine and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field analyses, they were not analyzed immediately, but as soon as possible on laboratory receipt.

Analytical result(s) reported as "ND" and/or "U", indicates the analyte was analyzed for but "Not Detected." Analytical result(s) reported as "TNTC" indicates that the microbiological test was "Too Numerous To Count."

## GLOSSARY OF QUALIFIERS:

## Inorganic Qualifiers (Q-column):

U Indicates that the analyte was analyzed for but not detected.

- E Indicates an estimated value due to the presence of interference. When applied to GFAA analysis, indicates the one-point method of addition recovered between 40-85 percent.
- B Indicates an estimated result value. The result was measured between the reporting limit and the method detection limit (MDL).
- H Indicates the compound/element was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination.

#### Organic Qualifiers (Q-column):

- U Indicates that the compound was analyzed for but not detected.
- J Indicates an estimated result value. This qualifier is used when mass spectral data indicated the presence of a compound that meets the identification criteria and the result is less than the specified quantitation limit, but greater than the method detection limit (MDL).
- B Indicates that the compound was found in both the sample and its associated laboratory blank. Indicates possible/probable blank contamination and warns the data user to exercise caution when applying the results to this compound.
- Indicates all compounds identified in an analysis at a secondary dilution factor.
- E Indicates that the compound in an analysis has exceeded the instrument linear calibration range.





## QUALITY ASSURANCE METHODS

# REFERENCES AND NOTES

Report Date: 10/12/2005

## GLOSSARY OF TERMS:

- Surrogates (Surrogate Standards): An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but are not normally found in environmental samples. For semi-volatiles and pesticides/Arochlors, surrogate compounds are added to every blank, sample, matrix spike, matrix spiked duplicate, matrix spike blank (LCS), and standard. These compounds are used to evaluate analytical efficiency by measuring recovery. Poor surrogate recovery may indicate a problem with the sample composition.
- Internal Standard: An organic compound, which is similar to the target analyte(s) in chemical composition and behavior in the analytical process. For GC/MS semi-volatiles and volatiles, internal standards are added to every blank, sample, matrix spike, matrix spike duplicate, matrix spike blank (LCS), and standard. Internal standard responses outside of established limits will adversely affect the quantitation and final concentration of target compounds.
- Matrix Spike (MS): An aliquot of a sample (water or soil) fortified (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for matrix interference by measuring recovery. The spiking occurs prior to sample preparation and analysis. Poor spike recovery may indicate a problem with the sample composition.
- Laboratory Control Sample (LCS): An aliquot of analyte-free reagent water or sand fortifed (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method efficiency.
- Blank: An artificial sample of analyte-free water or solvent, designed to monitor the introduction of contaminates into the analytical process.
- Method Dectection Limit (MDL): The minimum concentration of an analyte or compound that can be measured and reported with 99% confidence that the result concentration is greater than zero.

## Petroleum Hydrocarbon Comments:

- The following comments are specific to Diesel Range Organics (DRO), by GC/FID:
- Results for DRO are based on chromatographable portions of the petroleum product. The Carbon Range refers to the approximate chromatographic region covered by the specified petroleum product in straight-chain carbon units between C9-C36.
- Quantitation is based on the average response factors for a series of hydrocarbons standards. The sample result from the DRO fraction is independent of the target compound assignment.
- Samples yielding chromatographic patterns that do not agree with any of the method targets are reported as "unmatched".



### **VPH SAMPLE INFORMATION DATA**

### **SAMPLE INFORMATION**

Sampl	e ID: <u>230001</u>	-1 Batch# 51008	nagara
Matrix	Aqueous	Soil SedIment Other	
Containers	Satisfactory	Broken Leaking:	· · · · · · · · · · · · · · · · · · ·
	Aqueous	□ N/A pH<2 □ pH>2 Comment:	
	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
Sample	Soll or	☐ N/A ☐ Samples NOT preserved in Methanol or air-tight	g Soll/sediment
<sup>D</sup> reservatives	Sediment	container  Samples rec'd in Methanol: covering soil/sediment	mL Methanol
	Cediment	not covering soil/sediment	1:1 +/-25%
emperature	Received on Id	Samples received in air-tight container:  e Received at 4°C ± 2°C Other: °C	Other:
<u></u>	TE TROCOTTOG ON TO	O G ROCCHOU ALT O 12 O GINER.	
Sample	1D: <u>Q3000 1</u>	- a Batch# <u>51008</u>	_
<b>V</b> atrix	Aqueous	Soil Sediment Other	
ontainers	✓ Satisfactory	Broken Leaking:	
	Aqueous	□ N/A pH<2 □ pH>2 Comment:	
	(acid Preserved)	production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and production and produc	
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)	☐ N/A ☐ pH<11 . ☐ pH>11 Comment:	
Sample	Soll or	☐ N/A ☐ Samples NOT preserved in Methanol or air-tight	g Soil/sediment/
eservatives		container	mL Methanol
	Sediment	☐ Samples rec'd in Methanol: ☐ covering soil/sediment	1:1 +/-25%
		not covering soil/sediment	
		Samples received in air-tight container:	☐ Other:
mperature	Received on Ice	Received at 4°C ± 2°C	
•	10: <u>230001-</u>	3 Batch# 51008	
latrix	Aqueous	Soil Sediment Other	
ntainers	☐ Satisfactory	Broken Leaking:	
	Aqueous	□ N/A pH<2 □ pH>2 Comment:	
	(acid Preserved)		
	Aqueous	□ N/A □ pH<11 □ pH>11 Comment:	
	(TSP Preserved)		
ample servatives	Soil or	N/A Samples NOT preserved in Methanol or air-tight container	g Soil/sediment/ mL Methanol
	Sediment	☐ Samples rec'd in Methanol: ☐ covering soil/sediment ☐ not covering soil/sediment	1:1 +/-25%
		☐ Samples received in air-tight container:	Other:
nperature	Received on Ice	Received at 4°C ± 2°C Other: °C	



MADEP MA 014 RIDOH67 CTDPH 0494 VT DECWSD NH DES 253903-A

NELAP FL E87912 TOX NELAP NJ MA008 TOX NELAP NY 10843 NYDOH 10843



STL Westfield 53 Southampton Rd. Westfield, MA 01085 Tel:(413)572-4000 Fax:(413)572-3707 STL Billerica-Service Center 148 Rangeway Rd. N. Billerica, MA 01862 Tel:(978)667-1400 fax:(978)667-7871

rpjsckl Job Sample Receipt Checklist Report V2
Job Number.: 230001 Location.: 57345 Check List Number.: 1 Description.:  Customer Job ID: Job Check List Date.: Date of the Report: 10/04/2005  Project Number.: 20002799 Project Description.: Laboratory Analysis-Massachusetts Customer: URS Contact.: George Giese
Questions ? (Y/N) Comments
Chain-of-Custody Present? Y
If "yes", completed properly? Y
Custody seal on shipping container? N
If "yes", custody seal intact?
Custody seals on sample containers? N
If "yes", custody seal intact?
Samples iced? Y
Temperature of cooler acceptable? (4 deg C +/- 2). Y
Temperature at receipt 5.0 C
Samples received intact (good condition)? Y
Volatile samples acceptable? (no headspace) Y
Is a Trip 8lank required? Y
Was a Trip Blank provided? N
Correct containers used? Y
Adequate sample volume provided? Y
Samples preserved correctly? Y
Samples received within holding-time? Y
Agreement between COC and sample labels? Y
Comments stl pickup
If samples were shipped was there an air bill #?
Sample Custodian Signature/Date kar 10042005 Who 10/4/05
This is Page 1(A)

# Severi i rem Laboratories, inc. **Chain of Custody Form**



24001

Westfield, MA 01085 (P) 413-572-4000 (F) 413-572-3707

STL Westfield

914¥ Way H N. Billerica, MA 01862 (P) 978-667-1400 (F) 978-667-7871

STL Billerica / Service Center

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White = Lab file Yellow = Report copy Pink = Customer copy

# APPENDIX C

**Laboratory Analytical Reports** 



#### ANALYTICAL RESULTS

Prepared for:

URS CORPORATION 477 CONGRESS STREET 9TH FLOOR PORTLAND ME 04101-3432

207-879-7686

Prepared by:

Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425

### **SAMPLE GROUP**

The sample group for this submittal is 961978. Samples arrived at the laboratory on Wednesday, October 05, 2005. The PO# for this group is 2703034 and the release number is 2703034.

Client Description
Influent Grab Water Sample
Trip Blank Water Sample

<u>Lancaster Labs Number</u> 4617310 4617311

1 COPY TO ELECTRONIC COPY TO URS CORPORATION URS CORPORATION

Attn: Jared Urban Attn: GEORGE GIESE

Questions? Contact your Client Services Representative Angela M Miller at (717) 656-2300

Respectfully Submitted,

May E Lavely

Max E. Snavely Senior Specialist

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Page 1 of 5

Lancaster Laboratories Sample No. WW 4617310

Influent Grab Water Sample

Site #2703034

Route 44 and South St.

Collected: 10/04/2005 09:30 by RH Account Number: 11872

Submitted: 10/05/2005 09:05

Reported: 10/21/2005 at 16:34 477 CONGRESS STREET

Discard: 11/21/2005 9TH FLOOR

PORTLAND ME 04101-3432

URS CORPORATION

INF34

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
00259	Mercury	7439-97-6	N.D.	0.000062	mg/l	1
01754	Iron	7439-89-6	61.9	0.0378	mg/l	1
07035	Arsenic	7440-38-2	0.0241	0.0093	mg/l	1
07036	Selenium	7782-49~2	N.D.	0.0094	mg/l	1
07044	Antimony	7440-36-0	N.D.	0.0064	mg/l	1
	The LCS results are outside the	QC limits. S	ince the recover	y is high		
	and these compounds were not de	tected in the	sample, the resu	lts are		
07040	reported.	7440 43 0	NI D	0.00097	ma /1	1
07049	Cadmium	7440-43-9	N.D.		mg/l	1
07051	Chromium	7440-47-3	0.0426	0.0048	mg/l	
07053	Copper	7440-50-8	0.0796	0.0018	mg/l	1
07055	Lead	7439-92-1	0.0481	0.0084	mg/1	1
07061	Nickel	7440-02-0	0.0368	0.0058	mg/l	1
07066	Silver	7440-22-4	0.0078	0.0020	mg/l	1
07072	Zinc	7440-66-6	0.145	0.0053	mg/l	1
00206	Total Suspended Solids	n.a.	984.	15.0	mg/1	1
00237	Total Cyanide (water)	57-12-5	N.D.	0.0050	mg/l	1
00240	Chlorine Residual (DPD)	n.a.	N.D.	0.040	mg/l	1
	The 40 CFR Part 136 requires the (within 15 minutes) upon sample	at this analys collection.	as be performed. Because this was	not possible,		
	the result may not be used for	reporting purp	oses.	F,		
00612	SGT-HEM (TPH)	n.a.	21.	1.7	mg/l	1
06467	Hexavalent Chromium (water)	18540-29-9	N.D.	5.0	ug/l	1
	This sample was submitted past	the 24 hour ho	olding time for h	exavalent chromiu	m.	
06030	PCBs in Water					
00639	PCB-1016	12674-11-2	N.D.	0.096	ug/l	1
00640	PCB-1221	11104-28-2	N.D.	0.16	ug/l	1
00641	PCB-1232	11141-16-5	N.D.	0.096	ug/l	1
00642	PCB-1242	53469-21-9	N.D.	0.096	ug/l	1
00643	PCB-1248	12672-29-6	N.D.	0.096	ug/l	1
00644	PCB-1254	11097-69-1	N.D.	0.096	ug/l	1
00645	PCB-1260	11096-82-5	N.D.	0.096	ug/l	1
000.0					J.	
04678	TCL SW846 Semivolatiles/Waters					
03871	4-Chloroaniline	106-47-8	N.D.	1.	ug/l	1



Lancaster Laboratories, Inc. 2425 New Holland Pike PO Box 12425 Lancaster, PA 17605-2425 747,656-2200 Fav: 747,656-2681



Page 2 of 5

Lancaster Laboratories Sample No. WW 4617310

Influent Grab Water Sample Site #2703034 Route 44 and South St.

Collected:10/04/2005 09:30 b

by RH

Account Number: 11872

Submitted: 10/05/2005 09:05 Reported: 10/21/2005 at 16:34

Discard: 11/21/2005

URS CORPORATION
477 CONGRESS STREET

9TH FLOOR

PORTLAND ME 04101-3432

As Received

#### INF34

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
03879	Dibenzofuran	132-64-9	N.D.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	65.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	1.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	1.	ug/l	1
03925	Phenol	108-95-2	8.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	160.	14.	ug/l	5
03928	2,4-Dichlorophenol	120-83-2	N.D.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	19.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	10.	ug/l	1
·03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	3.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
03941	Hexachloroethane	67-72-1	N.D.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	1.	ug/l	1
03947	Naphthalene	91-20-3	26.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	1.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	1.	ug/l	1
03956	Fluorene	86-73-7	2. J	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	1.	ug/l	1



Page 3 of 5

Lancaster Laboratories Sample No. WW 4617310

Influent Grab Water Sample

Site #2703034

Route 44 and South St.

Discard: 11/21/2005

by RH Collected:10/04/2005 09:30

Account Number: 11872

URS CORPORATION Submitted: 10/05/2005 09:05 Reported: 10/21/2005 at 16:34

477 CONGRESS STREET

9TH FLOOR

PORTLAND ME 04101-3432 .

INF34

CAT			As Received	As Received Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
03958	Diethylphthalate	84-66-2	10.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	2.	ug/l	1
	N-nitrosodiphenylamine decompo- The result reported for N-nitro total of both compounds.	osodiphenylamir	ne represents the	e combined		
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	1.	ug/l	1
03964	Anthracene	120-12~7	N.D.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	1.	ug/l	1
03969	Butylbenzylphthalate	85 <b>-68-</b> 7	N.D.	2.	ug/l	1
03970	Benzo(a) anthracene	56-55-3	N.D.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	2.	ug/l	1
03975	Benzo(b) fluoranthene	205-99-2	N.D.	1.	ug/l	1
03976	Benzo(k) fluoranthene	207-08-9	N.D.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	1.	ug/l	1
04680	2-Methylphenol	95-48-7	22.	1.	ug/l	1
04681	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	1.	ug/l	1
04682	4-Methylphenol	106-44-5	7.	2.	ug/l	1
	3-Methylphenol and 4-methylphe chromatographic conditions use for 4-methylphenol represents	d for sample an the combined to	nalysis. The resu otal of both comp	ılt reported pounds.		
04684	Carbazole	86-74-8	N.D.	1.	ug/l	1
06371	8260 Special Cmpds for Waters					
05662	1,2-Dibromoethane	106-93-4	N.D.	1.	ug/l	1
05663	1,4-Dioxane	123-91-1	N.D.	70.	ug/l	1
06388	Acetone	67-64-1	57.	6.	ug/l	1
08171	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
08172	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1





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Lancaster Laboratories Sample No. WW 4617310

Influent Grab Water Sample Site #2703034

Route 44 and South St.

Collected:10/04/2005 09:30 by RH

Account Number: 11872

Submitted: 10/05/2005 09:05 Reported: 10/21/2005 at 16:34

Discard: 11/21/2005

URS CORPORATION 477 CONGRESS STREET

9TH FLOOR

PORTLAND ME 04101-3432

INF34

CAT			As Received	As Received Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
08173	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08195	Naphthalene	91-20-3	98.	1.	ug/l	1
07582	PPL + Xylene (total) by 8260					
02010	Methyl Tertiary Butyl Ether	1634-04-4	6.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	1. J	0.8	ug/l	1
02015	t-Butyl alcohol	75-65-0	130.	10.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	110.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	280.	0.7	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	18.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	750.	8.	ug/l	10

The temperature of the sample(s) upon receipt at the lab was 10.5 C.

Laboratory Chronicle

CAT			-	Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
00259	Mercury	EPA 245.1	1	10/08/2005 15:27	Damary Valentin	1
01754	Iron	EPA 200.7	1	10/17/2005 21:00	John P Hook	1
07035	Arsenic	EPA 200.7	1	10/18/2005 19:59	John P Hook	1
07036	Selenium	EPA 200.7	1	10/18/2005 19:59	John P Hook	1
07044	Antimony	EPA 200.7	1	10/18/2005 19:59	John P Hook	1
07049	Cadmium	EPA 200.7	1	10/18/2005 19:59	John P Hook	1
07051	Chromium	EPA 200.7	1	10/18/2005 19:59	John P Hook	1





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Lancaster Laboratories Sample No. WW 4617310

Influent Grab Water Sample
Site #2703034

Route 44 and South St.

Collected:10/04/2005 09:30 by RH Account Number: 11872

 Submitted: 10/05/2005 09:05
 URS CORPORATION

 Reported: 10/21/2005 at 16:34
 477 CONGRESS STREET

 Discard: 11/21/2005
 9TH FLOOR

 PORTLAND ME 04101-3432

INF34 EPA 200.7 10/17/2005 21:00 John P Hook 07053 Copper 1 10/18/2005 19:59 John P Hook EPA 200.7 07055 Lead 1 10/18/2005 19:59 John P Hook 1 07061 Nickel EPA 200.7 1 10/17/2005 21:00 John P Hook EPA 200.7 07066 Silver EPA 200.7 10/18/2005 19:59 John P Hook 07072 Zinc 1 10/07/2005 14:58 Yolunder Y Bunch 1 00206 Total Suspended Solids EPA 160.2 Total Cyanide (water) EPA 335.4 1 10/12/2005 19:13 Venia B McFadden 00237 1 10/05/2005 21:20 Daniel S Smith 1 Chlorine Residual (DPD) EPA 330.4 00240 SGT-HEM (TPH) EPA 1664A 1 10/12/2005 13:30 Nichole L Underwood 1 00612 1 06467 Hexavalent Chromium SW846-7199 1 10/06/2005 11:10 Shannon L Phillips (water) 1 1 10/09/2005 18:11 Douglas D Seitz 06030 PCBs in Water EPA 608 10/08/2005 03:23 Linda M Hartenstine TCL SW846 SW-846 8270C 04678 Semivolatiles/Waters SW-846 8270C 10/08/2005 08:40 Brian K Graham 04678 TCL SW846 Semivolatiles/Waters SW-846 8260B 10/14/2005 03:09 Seth J Good 06371 8260 Special Cmpds for Waters 10/14/2005 03:09 Seth J Good 07582 PPL + Xylene (total) by SW-846 8260B 8260 SW-846 8260B 1 10/14/2005 13:22 Shawn J Rice 07582 PPL + Xylene (total) by 1 1 10/07/2005 14:45 Nancy J Shoop 00492 Cyanide Water Distillation EPA 335.4 BNA Water Extraction SW-846 3510C 1 10/07/2005 18:20 JoElla L Rice 1 00813 10/07/2005 09:30 Deborah M Zimmerman 1 00817 Water Sample Pest. EPA 608 Extraction SW-846 5030B 10/14/2005 03:09 Seth J Good 01163 GC/MS VOA Water Prep 10/14/2005 13:22 01163 GC/MS VOA Water Prep SW-846 5030B Shawn J Rice n.a. 1 10/08/2005 10:30 Deborah A Krady 1 05714 PW/WW Hg Digest EPA 245.1 10/08/2005 18:50 Mirit S Shenouda 1 05732 EPA 600 ICP Digest (total) EPA 200.7



Page 1 of 2

Lancaster Laboratories Sample No. WW 4617311

Trip Blank Water Sample Site #2703034 Route 44 and South St.

Collected: n.a.

Submitted: 10/05/2005 09:05 Reported: 10/21/2005 at 16:34

Discard: 11/21/2005

TRB34

Account Number: 11872

URS CORPORATION 477 CONGRESS STREET

9TH FLOOR

PORTLAND ME 04101-3432

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06371	8260 Special Cmpds for Waters					
05662	1,2-Dibromoethane	106-93-4	N.D.	1.	ug/l	1
05663	1,4-Dioxane	123-91-1	N.D.	70.	ug/l	1
06388	Acetone	67-64-1	N.D.	6.	ug/l	1
08171	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
08172	1,4-Dichlorobenzene	106-46-7	N.D.	1,	ug/l	1
08173	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08195	Naphthalene	91-20-3	N.D.	1.	ug/l	1
07582	PPL + Xylene (total) by 8260					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.8	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	10.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

The temperature of the sample(s) upon receipt at the lab was 10.5 C.



Lancaster Laboratories, Inc. 2425 New Holland Pike PO Box 12425 Lancaster, PA 17605-2425 717-656-2300 Fax: 717-656-2681



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Lancaster Laboratories Sample No. WW 4617311

Trip Blank Water Sample Site #2703034 Route 44 and South St.

Collected: n.a.

Submitted: 10/05/2005 09:05

Reported: 10/21/2005 at 16:34

Discard: 11/21/2005

Account Number: 11872

URS CORPORATION

477 CONGRESS STREET

9TH FLOOR

PORTLAND ME 04101-3432

TRB34

Laboratory Chronicle

CAT			_	Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor -
06371	8260 Special Cmpds for	SW-846 8260B	1	10/14/2005 03:34	Seth J Good	1
07582	Waters PPL + Xylene (total) by 8260	SW-846 8260B	1	10/14/2005 03:34	Seth J Good	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/14/2005 03:34	Seth J Good	n.a. ~



Page 1 of 6

## Quality Control Summary

Client Name: URS CORPORATION

Group Number: 961978

Reported: 10/21/05 at 04:34 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank <u>MDL</u>	Report <u>Units</u>	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 05278024001A	Sample	number(s):	4617310					
Chlorine Residual (DPD)	N.D.	0.040	mg/l	100	100	95-105	0	2
Batch number: 05279401401A	C1-		4617210					
Hexavalent Chromium (water)	N.D.	number(s): 5.0	461/310 ug/l	102		90-110		
newardiene chiomium (water)	N.D.	3.0	ug/1	102		90-110		
Batch number: 052800012A	Sample	number(s):	4617310					
PCB-1016	N.D.	0.10	ug/l	56	86	52-123	42*	30
PCB-1221	N.D.	0.17	ug/l					
PCB-1232	N.D.	0.10	ug/l					
PCB-1242	N.D.	0.10	ug/l					
PCB-1248	N.D.	0.10	ug/l					
PCB-1254	N.D.	0.10	ug/l					
PCB-1260	N.D.	0.10	ug/l	66	92	62-133	33*	30
Batch number: 05280020601A	Sample	number(s):	4617310					
Total Suspended Solids	N.D.	3.0	mg/l	81		56-128		
Batch number: 05280102101A	Sample	number(s):	4617310					
Total Cyanide (water)	N.D.	0.0050	mg/l	99		90-110		
Pat at 2000 050000000000000000000000000000000			1617010					
Batch number: 05280807901A	•	number(s):			45			
SGT-HEM (TPH)	N.D.	1.7	mg/l	77	65	64-114	16	20
Batch number: 05280WAC026	Sample :	number(s):	4617310					
4-Chloroaniline	N.D.	1.	ug/l	83	89	23-116	7	30
Dibenzofuran	N.D.	1.	ug/l	91	96	65-110	5	30
2-Methylnaphthalene	N.D.	1.	ug/l	80	85	66-104	6	30
2-Nitroaniline	N.D.	1.	ug/l	90	95	73-115	5	30
3-Nitroaniline	N.D.	1.	ug/l	89	95	63-112	6	30
4-Nitroaniline	N.D.	1.	ug/l	75	82	55-107	9	30
2,4,5-Trichlorophenol	N.D.	1.	ug/l	85	89	70-115	5	30
2-Chlorophenol	N.D.	1.	ug/l	83	90	63-112	8	30
Phenol	N.D.	1.	ug/l	45	49	29-57	7	30
2-Nitrophenol	N.D.	1.	ug/l	95	102	83-119	7	30
2,4-Dimethylphenol	N.D.	3.	ug/l	82	84	60-107	2	30
2,4-Dichlorophenol	N.D.	1.	ug/l	89	94	66-110	5	30

### \*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





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# Quality Control Summary

Client Name: URS CORPORATION Group Number: 961978

Reported: 10/21/05 at 04:34 PM

# Laboratory Compliance Quality Control

	Blank	Blank	Report	LCS	LCSD	LCS/LCSD		
Analysis Name	Result	MDL	Units	%REC	%REC	Limits	RPD	RPD Max
4-Chloro-3-methylphenol	N.D.	1.	ug/l	90	95	48-114	6	30
2,4,6-Trichlorophenol	N.D.	1.	ug/l	90	98	69-111	8	30
2,4-Dinitrophenol	N.D.	20.	ug/l	77	85	44-130	10	30
4-Nitrophenol	N.D.	10.	ug/l	28	27	16-75	5	30
4,6-Dinitro-2-methylphenol	N.D.	5.	ug/l	86	92	56-130	6	30
Pentachlorophenol	N.D.	3.	ug/l	87	90	48-108	3	30
bis(2-Chloroethyl)ether	N.D.	1.	ug/l	78	84	57-110	8	30
1,3-Dichlorobenzene	N.D.	1.	ug/l	67	71	52-102	6	30
1,4-Dichlorobenzene	N.D.	1.	ug/l	71	74	54-103	4	30
1,2-Dichlorobenzene	N.D.	1.	ug/l	69	73	58-99	5	30
Hexachloroethane	N.D.	1.	ug/l	57	59	33-106	4	30
N-Nitroso-di-n-propylamine	N.D.	1.	ug/l	89	96	56-109	8	30
Nitrobenzene	N.D.	1.	ug/l	89	95	61-111	7	30
Isophorone	N.D.	1.	ug/l	86	91	63-105	6	30
bis(2-Chloroethoxy)methane	N.D.	1.	ug/l	92	99	69-119	7	30
1,2,4-Trichlorobenzene	N.D.	1.	ug/l	77	81	62-101	5	30
Naphthalene	N.D.	1.	ug/l	86	92	70-102	7	30
Hexachlorobutadiene	N.D.	1.	ug/l	63	67	33-118	6	30
Hexachlorocyclopentadiene	N.D.	5.	ug/l	73	79	14-169	7	30
2-Chloronaphthalene	N.D.	1.	ug/l	66	70	56-100	6	30
Acenaphthylene	N.D.	1.	ug/l	103	108	65-120	5	30
Dimethylphthalate	N.D.	2.	ug/l	86	91	46-109	5	30
2,6-Dinitrotoluene	N.D.	1.	ug/l	92	97	70-108	6	30
Acenaphthene	N.D.	1.	ug/l	92	98	68-111	7	30
2,4-Dinitrotoluene	N.D.	1.	ug/l	98	105	75-122	7	30
Fluorene	N.D.	1.	ug/l	92	96	61-116	4	30
4-Chlorophenyl-phenylether	N.D.	1.	ug/l	100	103	65-110	3	30
Diethylphthalate	N.D.	2.	ug/l	91	95	61-110	4	30
N-Nitrosodiphenylamine	N.D.	2.	ug/l	91	94	63-104	4	30
4-Bromophenyl-phenylether	N.D.	1.	ug/l	93	98	67-110	5	30
Hexachlorobenzene	N.D.	1.	ug/l	96	99	68-113	3	30
Phenanthrene	N.D.	1.	ug/l	92	97	68-111	6	30
Anthracene	N.D.	1.	ug/l	90	95	68-108	6	30
Di-n-butylphthalate	N.D.	2.	ug/l	93	97	63-113	4	30
Fluoranthene	N.D.	1.	ug/l	93	97	66-108	4	30
Pyrene	N.D.	1.	ug/l	91	96	68-114	5	30
Butylbenzylphthalate	N.D.	2.	ug/l	87	92	63-120	6	30
Benzo(a)anthracene	N.D.	1.	ug/l	93	98	72-112	5	30
Chrysene	N.D.	1.	ug/l	92	100	70-111	8	30
3,3'-Dichlorobenzidine	N.D.	2.	ug/l	90	97	39-116	7	30
bis(2-Ethylhexyl)phthalate	N.D.	2.	ug/l	88	94	62-126	7	30
Di-n-octylphthalate	N.D.	2.	ug/l	87	95	58-118	8	30
Benzo(b) fluoranthene	N.D.	1.	ug/l	86	92	67-117	7	30
Benzo(k) fluoranthene	N.D.	1.	ug/l	97	106	67-120	9	30
Benzo (a) pyrene	N.D.	1.	ug/l	90	98	68-121	9	30
Indeno(1,2,3-cd)pyrene	N.D.	1.	ug/l	87	93	67-122	7	30
Dibenz (a, h) anthracene	N.D.	1.~	ug/l	94	100	71-129	7	30

<sup>\*-</sup> Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



Lancaster Laboratories, Inc. 2425 New Holland Pike PO Box 12425 Lancaster, PA 17605-2425

3345 8 .. 3440/03



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## Quality Control Summary

Client Name: URS CORPORATION

Group Number: 961978

Reported: 10/21/05 at 04:34 PM

### Laboratory Compliance Quality Control

	Blank Blank Report LCS		LCS	LCSD	LCS/LCSD			
Analysis Name	Result	MDL	Units	%REC	%REC	Limits	RPD	RPD Max
Benzo(g,h,i)perylene	N.D.	$\overline{1.}$	ug/l	85	92	67-121	8	30
2-Methylphenol	N.D.	1.	ug/l	77	82	56-105	7	30
2,2'-oxybis(1-Chloropropane)	N.D.	1.	ug/l	113	123	68-133	9	30
4-Methylphenol	N.D.	2.	ug/l	81	86	51-98	7	30
Carbazole	N.D.	1.	ug/l	94	99	66-109	5	30
Batch number: 052815714002	-	umber(s): 4						
Mercury	N.D.	0.00006	mg/l	90		80-120		
		2						
T   1   05001570000			617010					
Batch number: 052815732002	-	umber(s): 4		100		05 115		
Iron	N.D.	0.0378	mg/l	103		85-115		
Arsenic	N.D.	0.0093	mg/l	108		85-115		
Selenium	N.D.	0.0094	mg/l	109		85-115		
Antimony	N.D.	0.0064	mg/l	130*		85-115		
Cadmium	N.D.	0.00097	mg/l	101		85-115		
Chromium	N.D.	0.0048	mg/l	102		85-115		
Copper	N.D.	0.0018	mg/l	104		85-115		
Lead	N.D.	0.0084	mg/l	104		85-115		
Nickel	N.D.	0.0058	mg/l	101		85-115		
Silver	N.D.	0.0020	mg/l	108		85-115		
Zinc	N.D.	0.0053	mg/l	100		85-115		
Batch number: T052862AA	Sample n	umber(s): 4	617310-46	17311				
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	88		77-127		
t-Amyl methyl ether	N.D.	0.8	ug/l	88		79-113		
t-Butyl alcohol	N.D.	10.	ug/l	106		60-133		
Vinyl Chloride	N.D.	1.	ug/l	99		71-126		
1,1-Dichloroethene	N.D.	0.8	ug/l	97		79-130		
Methylene Chloride	N.D.	2.	ug/l	100		85-120		
1,1-Dichloroethane	N.D.	1.	ug/l	99		83-127		
cis-1,2-Dichloroethene	N.D.	0.8	ug/l	97		84-117		•
1,1,1-Trichloroethane	N.D.	0.8	ug/l	103		83-127		
Carbon Tetrachloride	N.D.	1.	ug/l	97		77-130		
Benzene	N.D.	0.5	ug/l	93		85-117		
1,2-Dichloroethane	N.D.	1.	ug/l	107		77-132		
Trichloroethene	N.D.	1.	ug/l	101		87-117		
Toluene	N.D.	0.7	ug/l	100		85-115		
1,1,2-Trichloroethane	N.D.	0.8	ug/l	105		86-113		
Tetrachloroethene	N.D.	0.8	ug/l	105		74-125		
Ethylbenzene	N.D.	0.8	ug/l	98		82-119		
1,2-Dibromoethane	N.D.	1.	ug/l	101		81-114		
1,4-Dioxane	N.D.	70.	ug/l	137		43-147		
Xylene (Total)	N.D.	0.8	ug/l	101		83-113		
Acetone	N.D.	6.	ug/l	103		21-226		
1,3-Dichlorobenzene	N.D.	1.	ug/l	100		81-114		
1,4-Dichlorobenzene	N.D.	1.	ug/l	95		84-116		

<sup>\*-</sup> Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





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# Quality Control Summary

Client Name: URS CORPORATION

Group Number: 961978

Reported: 10/21/05 at 04:34 PM

## Laboratory Compliance Quality Control

	Blank	Blank	Report	LCS	LCSD	LCS/LCSD		
Analysis Name	Result	MDL	Units	%REC	%REC	<u>Limits</u>	RPD	RPD Max
1,2-Dichlorobenzene	N.D.	1.	ug/l	96		81-112		
Naphthalene	N.D.	1.	ug/l	93		61-116		
Batch number: T052862AB	Sample n	umber(s):	4617310					
Xylene (Total)	N.D.	0.8	ug/l	101		83-113		

### Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD <u>MAX</u>	BKG Conc	DUP Conc	DUP RPD	Dup RPD
Batch number: 05278024001A Chlorine Residual (DPD)	Sample	number	(s): 4617310			0.98	0.94	4	4
Batch number: 05279401401A Hexavalent Chromium (water)	Sample 105	number 105	(s): 4617310 75-125	0	20	N.D.	N.D.	200* (1)	20
Batch number: 05280020601A Total Suspended Solids	Sample	number	(s): 4617310			390.	320.	20 (1)	20
Batch number: 05280102101A Total Cyanide (water)	Sample 92	number	(s): 4617310 90-110			N.D.	N.D.	0 (1)	9
Batch number: 052815714002 Mercury	Sample 106	number 101	(s): 4617310 80-120	5	20	N.D.	N.D.	4 (1)	20
Batch number: 052815732002 Iron Arsenic	66* Î 113	71* 114	(s): 4617310 80-120 80-120	4 1	20 20	0.356 N.D.	N.D. N.D.	182* (1) 27* (1)	20 20
Selenium Antimony Cadmium Chromium	119 143* 98 99	112 142* 97 98	80-120 80-120 80-120 80-120	5 1 1 1	20 20 20 20	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	260* (1) 270* (1) 19 (1) 2000*	20 20 20 20
Copper Lead	113 106	112 103	80-120 80-120	0	20 20	N.D. N.D.	N.D. N.D.	(1) 52* (1) 13 (1)	20 20
Nickel Silver Zinc	100 120 99	99 123* 98	80-120 80-120 80-120	1 1 0	20 20 20	N.D. 0.117 0.0055 J	N.D. 0.121 N.D.	85* (1) 3 166* (1)	20 20 20
Batch number: T052862AA Methyl Tertiary Butyl Ether t-Amyl methyl ether t-Butyl alcohol Vinyl Chloride	Sample 90 89 114 104	number 88 86 106 104	(s): 4617310 69-134 72-125 56-134 81-150	1-46173 2 3 7 0	30 30 30 30 30				

### \*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



Lancaster Laboratories, Inc. 2425 New Holland Pike PO Box 12425 Lancaster, PA 17605-2425 747-656-2300 Fav 717-656-2681



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## Quality Control Summary

Client Name: URS CORPORATION

Group Number: 961978

Reported: 10/21/05 at 04:34 PM

### Sample Matrix Quality Control

	MS	MSD	MS/MSD		RPD	BKG	DUP	DUP	Dup RPD
Analysis Name	%REC	%REC	Limits	RPD 2	MAX	Conc	Conc	RPD	Max
1,1-Dichloroethene	110	108	87-145	2	30				
Methylene Chloride	102	100	79-133	2	30				
1,1-Dichloroethane	106	105	85-135	1	30				
cis-1,2-Dichloroethene	105	102	83-126	2	30				
1,1,1-Trichloroethane	114	112	81-142	2	30				
Carbon Tetrachloride	113	110	79-155	2	30				
Benzene	102	100	83-128	2	30				
1,2-Dichloroethane	120	113	70-143	6	30				
Trichloroethene	115	111	83-136	3	30				
Toluene	109	104	83-127	4	30				
1,1,2-Trichloroethane	106	101	77-125	5	30				
Tetrachloroethene	111	108	78-133	2	30				
Ethylbenzene	104	101	82-129	3	30				
1,2-Dibromoethane	101	95	78-120	6	30				
1,4-Dioxane	139	129	30-153	7	30				
Xylene (Total)	105	101	82-130	4	30				
Acetone	96	89	12-153	7	. 30				
1,3-Dichlorobenzene	105	103	79-123	3	30				
1,4-Dichlorobenzene	103	100	81-122	3	30				
1,2-Dichlorobenzene	100	97	82-117	3	30				
Naphthalene	95	90	50-124	5	30				
Batch number: T052862AB	Sample	e number	(s): 461731	.0					
Xylene (Total)	105	101	82-130	4	30				

### Surrogate Quality Control

Analysis Name: PCBs in Water Batch number: 052800012A

	Tetrachloro-m-xylene	Decachlorobiphenyl
4617310	80	91
Blank	82	78
LCS	61	73
LCSD	85	75
Limits:	43-122	13-130

Analysis Name: TCL SW846 Semivolatiles/Waters

Batch number: 05280WAC026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5
4617310	49	30	102	98
Blank	60	40	107	94

- \*- Outside of specification
- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





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# Quality Control Summary

Client Name: URS CORPORATION Group Number: 961978 Reported: 10/21/05 at 04:34 PM Surrogate Quality Control 107 94 LCS 39 58 LCSD 60 39 112 98 51-123 10-80 31-148 Limits: 10-99 Terphenyl-d14 2-Fluorobiphenyl 4617310 90 91 Blank 85 108 95 106 LCS LCSD 98 110 Limits: 52-151 64-112 Analysis Name: PPL + Xylene (total) by 8260 Batch number: T052862AA 1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene Dibromofluoromethane 4617310 93 87 96 111 96 104 4617311 90 93 Blank 93 90 96 104 97 95 99 106 LCS 98 110 MS 95 91 96 107 MSD 93 93 77-113 80~113 78-113 Limits: 80-116 Analysis Name: PPL + Xylene (total) by 8260 Batch number: T052862AB 1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene Dibromofluoromethane 97 91 108 Blank 97 LCS 97 95 99 106 98 110 MS 95 91 96 107 MSD 93 93 77-113 78-113

80-113

80-116

Limits:

<sup>(2)</sup> The background result was more than four times the spike added.



<sup>\*-</sup> Outside of specification

<sup>(1)</sup> The result for one or both determinations was less than five times the LOQ.

# ConocoPhillips Analysis Request/Chain of Custody

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